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The Goulstonian Lectures

ON

THE SENSIBILITY OF THE ALIMENTARY CANAL IN HEALTH AND DISEASE.

Delivered at the Royal College of Physicians of London on March 14th, 16th, and 21st, 1911,

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ASSISTANT PHYSICIAN AND PHYSICIAN IN CHARGE OF THE DEPARTMENT FOR NERVOUS DISEASES, GUY'S HOSPITAL.

LECTURE I.

Delivered on March 14th.

INTRODUCTION.

MR. PRESIDENT AND GENTLEMEN,—No branch of medicine has made more rapid strides in the last 50 years than that which deals with diseases of the alimentary canal. "Exact physical information," wrote Brinton in 1858 concerning pathological processes in the stomach, "is almost denied us. The aids to diagnosis afforded by auscultation in the diseases of the thoracic viscera and by chemistry in those of the urinary apparatus scarcely find any parallel in the maladies of an organ which executes its work without perceptible sound or movement, and only dismisses its products from the body after a complex series of changes and admixtures." But Brinton's admirable pathological and clinical investigations resulted in the production of a series of "Lectures on the Diseases of the Stomach," which can be read even to-day with interest and profit.

No further advance was made until 15 years later, when, after Kussmaul had introduced lavage into gastric therapeutics, von Leube extended the use of the stomach-tube to diagnosis as well as treatment. A method was now available for studying diseases of the stomach, the importance of which was comparable to that of examining the urine in diseases of the kidneys. In the last few years Adolf Schmidt has shown that the examination of the fæces can yield equally valuable information with regard to disturbances in intestinal digestion.

Just as our knowledge of the chemical functions of the alimentary canal was revolutionised in the latter part of the nineteenth century by the introduction of test-meals, so in the present century has our knowledge of its motor functions in health and disease undergone a complete revision as a result of investigations with the X rays

Greatly as we are indebted to these new methods of examining patients suffering from diseases of the alimentary canal, medicine owes perhaps even more to the surgeons, who have founded a true pathology of the living and have enabled us to recognise that there is a definite anatomical cause for many well-recognised groups of symptoms which had hitherto been regarded as functional in origin.

The use of the stomach-tube and the X rays and the frequency of abdominal operations for diseases which were formerly regarded as quite outside the province of the surgeon have taught us the true significance of many of the symptoms which were universally misinterpreted until quite recent times. But although the significance of certain symptoms is now clear, their actual cause is in many instances as obscure as ever. With the help of our modern methods of research it should be possible to throw light upon some of these obscurities. Pain is probably the most common as well as the most trying of all symptoms, and it is to an attempt to elucidate the causes of pain and other abnormal sensations in diseases of the alimentary canal that I propose to devote these lectures, which at your request, Sir, I have the honour to deliver.

It is clearly impossible to understand the origin of pathological sensations so long as the degree of sensibility of healthy organs to various stimuli remains unknown. Comparatively little experimental work has been done on this subject, most of what has been written on visceral sensibility having been founded on theoretical considerations. I have for some time been experimentally investigating the sensibility of the alimentary canal, and my first lecture will be concerned with the conclusions which can be drawn from our observations on the sensibility of the œsophagus, stomach, and intestines to tactile, thermal, and chemical stimulation. I shall then proceed to the discussion of the sensations of fulness, emptiness, and pain. Most of my work on the sensibility of the alimentary canal under physiological conditions has been done in coöperation with Mr. F. Cook, Mr. E. G. Schlesinger, and Mr. G. Marshall, and when I refer to "our" observations I mean the observations made with these gentlemen, unless the contrary is specially indicated. For help in certain investigations I am greatly indebted to Mr. H. W. Barber, to Mr. K. H. Digby, to Dr. William Hill and Mr. J. W. Harrison, to Dr. W. Johnson and to Dr. M. S. Pembrey.

I.—TACTILE SENSIBILITY.

When chemically inert substances at the body temperature are swallowed no sensation is produced after they leave the pharynx, and no indication of their passage through the stomach and intestines is felt until fæces enter the rectum immediately before defæcation.

The sensibility of the œsophagus to tactile stimuli was tested by pouring thick fluids at the body temperature down an indiarubber tube, the lower end of which was situated at various points in the œsophagus; this was only done after the tube had been left in position for a sufficient period for the individual to become accustomed to its presence. He never experienced any sensation. In conjunction with Dr. Hill and Mr. Harrison experiments were made with an œsophagoscope which had a slit down one side of it. A metal bulb on a long holder was warmed to the body temperature and then moved along the mucous membrane of various parts of the œsophagus through the slit in the tube; nothing was felt. It was found that the whole pharynx was sensitive, the disappearance of tactile sensibility occurring abruptly at the upper border of the cricoid cartilage, which is generally regarded as the anatomical separation between the pharynx and the œsophagus, although there is no sharp dividing line at this point in the structure or nerve-supply of the mucous membrane.

The insensibility of the gastric and intestinal mucous membrane to tactile stimuli was proved by the absence of any sensation when fluids at the body temperature were introduced through a tube by the natural passages in normal individuals and by the artificial openings in patients on whom a gastrostomy or colostomy had been performed.

The sensibility of the rectal mucous membrane was investigated with Dr. Johnson by stroking the part seen through a rectal speculum with a flat metal instrument which had been warmed to the body temperature. No sensation was experienced until the anal canal was reached, the mucous membrane of this proving to be very sensitive. We may thus conclude that *the alimentary canal from the commencement of the œsophagus to the junction of the rectum with the anal canal is completely insensitive to tactile stimulation.*

II. THERMAL SENSIBILITY.

Quincke,[1] Neumann,[2] and Roux[3] have published observations which appear to indicate that the stomach is sensitive to thermal stimulation, a conclusion which L. R. Müller[4] and Becher[5] were unable to confirm. Head, Rivers, and Sherren[6] found that iced water produced a sensation of cold and water at 50° C. an uncomfortable or hot sensation, when introduced into the intestine of patients on whom a colostomy had been performed.

Our results in the case of the stomach are in opposition to those of Quincke, Neumann, and Roux, and agree with those of Becher and Müller so far as the latter go. We found that the introduction of ice-cold water or hot water at any temperature between 40° and 50° C. into a normal stomach produced no sensation of any sort. We suggest that Roux's results were due to his having employed an ordinary stomach-tube. When hot or cold water is passed through such a tube, its outer surface rapidly becomes hot or cold, so that the thermal stimulus can act upon the œsophagus. We have

[1] H. Quincke: Archiv für Experimentelle Pathologie und Pharmakologie, Band xxv., p. 375, 1889.
[2] A. Neumann: Wiener klinische Wochenschrift, Band xix., p. 923, 1906.
[3] J. Ch. Roux: Maladies du Tube Digestif, edited by Debove, Achard and Castaigne, Tome I., p. 375, Paris, 1907.
[4] L. R. Müller: Mittheilungen aus den Grenzgebieten der Medizin und Chirurgie, Band xviii., p. 600, 1908.
[5] E. Becher: Zeitschrift für Psychologie, Band xlix., p. 341, 1908.
[6] H. Head, W. H. Rivers, and J. Sherren: Brain, vol. xxviii., p. 99 1905.

used a double tube, an indiarubber tube 5 mm. in diameter being introduced into an ordinary stomach-tube. With this arrangement three or four ounces of water can be passed down the inner tube before the outer surface of the stomach-tube becomes definitely hot or cold. Accordingly we have found, after passing the double tube into the stomach, that no sensation of heat is produced until more than three or four ounces of hot water are poured down, an ill-defined sensation of heat being then experienced; this is due to conduction of the heat to the œsophageal wall, as the observations on gastrostomised patients to be presently described show that much larger quantities of hot water can be introduced without giving rise to any sensation. As much as half a pint of ice-cold water can be poured through a double tube into the stomach without a sensation of cold being felt.

These observations made it probable that the sensation felt when hot and cold fluids are swallowed is produced in the œsophagus. This was proved to be the case by introducing the tube a distance less than 40 centimetres from the teeth, so that its end was in the œsophagus a short distance above the cardiac orifice of the stomach. On now pouring down water at 0° and at 40° or 50° C. a sensation respectively of cold and heat was produced after a latent period of between a half and one second, its character and indefinite localisation deep in the epigastrium being exactly the same as when the fluid is swallowed in the ordinary way. On now pushing the tube into the stomach and pouring hot and cold fluid down, no sensation was produced. On four occasions, hot and cold water having been poured into the stomach without producing any sensation, the tube was pulled up so that its lower end did not quite reach the cardia: the temperature sensation was at once felt. X ray observations showed that the point in the epigastrium where the temperature sensation was felt was generally within an inch of the region occupied by the lower end of the œsophagus, as projected on the anterior surface of the body.

In conjunction with Dr. Hill and Mr. Harrison, I found by means of cold and hot metal bulbs, passed through an œsophagoscope so as to touch the mucous membrane of a normal man in various situations, that the whole œsophagus is sensitive to thermal stimuli, and that the power of localisation is extremely accurate, particularly in the case of heat.

Some observations made on a young woman who had had a gastrostomy performed for a fibrous stricture of the œsophagus, which followed the swallowing of strong hydrochloric acid, and on three men, who had undergone the same operation for epithelioma of the œsophagus, confirmed our belief that the gastric mucous membrane is completely insensitive to thermal stimuli. Hot and ice-cold fluids were poured through a catheter, which was passed through the gastrostomy tube, this double-walled channel being used so as to prevent the skin surrounding the opening from being warmed or cooled. It was found that no thermal or other sensation was experienced, however large a quantity of the fluid was introduced.

On paying accurate attention to the sensation produced after drinking a mouthful of very hot or cold fluid, it was now recognised that the sensation in the epigastrium began about three seconds after the swallowing act, and lasted for about three seconds. On simultaneously listening to the epigastrium it was found that the second deglutition sound, which we had previously shown [7] begins immediately after the last trace of food has entered the stomach, corresponded with the moment when the sensation was disappearing. Hence the period during which the sensation is felt must be that in which the fluid is collected in the lower end of the œsophagus and is slowly passing into the stomach. We may therefore conclude that the feeling of heat and cold experienced when hot and cold fluids are drunk, and until now almost universally ascribed to the stomach, really originates in the lower end of the œsophagus; it lasts for a period which coincides with that during which the fluid is passing through the cardiac orifice into the stomach.

James Mackenzie [8] ascribed the sensation of heat and cold in the epigastrium after drinking hot and cold fluids to reflex vascular changes in the skin of that area, and he believed that the skin is actually the seat of the sensation. We have disproved this theory by placing ice over the skin of the epigastrium so that a maximal sensation of cold was produced. Ice-cold water was then poured into the œsophagus through a tube, and immediately a sensation of cold was felt in a situation deeper than that simultaneously felt as a result of the contact of the ice with the skin. On another occasion the skin of the epigastrium was warmed by a flask containing water at 48° C., and water at the same temperature was poured through a tube into the lower end of the œsophagus. A sensation of heat deeper than that felt in the skin was produced. Suggestion was excluded by blindfolding the individual and pouring hot and then cold water down without saying which was to be done first; the temperature was recognised immediately in both cases.

In a woman with severe bulbar paralysis, in whom no sensory or motor disturbances were present in the limbs or trunk, Dr. Johnson and I found that hot and cold fluids poured into the œsophagus produced no sensation. It is probable, therefore, that thermal sensations in the œsophagus are conveyed to the central nervous system by the vagi and not by sympathetic fibres.

Since the preliminary publication of our observations on the sensibility of the colon to temperature [9] they have been confirmed by Zimmermann,[10] but they are not in complete agreement with those of Head, Rivers, and Sherren. By introducing hot or cold water through a double tube into the colon of four healthy individuals we found that the mucous membrane of the large intestine is generally as insensitive to temperature as is that of the stomach. A double tube is required, as otherwise heat or cold is felt in the sensitive anal canal, and it is then difficult to be sure whether the sensation is present elsewhere as well. We have used for the purpose an ordinary rectal tube, through which had been passed a small indiarubber tube just large enough to fit tightly in the round opening at its end. We obtained the same result in six patients on whom colostomy had been performed for stricture of the rectum, when hot and cold fluids were introduced through a tube into both the proximal and distal parts of the colon. In one normal individual and in two patients a very slight and ill-defined thermal sensation was produced on a single occasion with hot water, and in one patient with cold water, although in a number of additional observations on the same individuals no sensation was experienced. The exposed mucous membrane in colostomy cases is invariably quite insensitive to heat and cold.

With the aid of a rectal speculum Dr. Johnson, Mr. Barber, and I found that a cold or hot metal instrument produced no sensation when applied to the rectal mucous membrane, but that the anal canal is very sensitive to thermal stimuli. A curious result was obtained by Zimmermann in his recent observations on himself. Although he found that hot and cold water had no effect, and a cold glass rod passed 10 centimetres through a tube into his rectum produced no sensation, a hot rod produced a pleasant sensation of warmth in the abdomen, which remained unaltered in character even when it was heated to 140° C. L. R. Miller records a similar observation.

In a paper published at the same time as our first communication on the subject, Becher described experiments which showed that he differed from most people in that he experienced no sensation of any sort after hot and cold water had passed his pharynx. This variability in the perception of heat and cold in the œsophagus of different individuals may perhaps also exist in the case of the stomach and intestines and account for the contradictory results obtained by different observers. My own conclusion would be that the œsophagus and anal canal are almost always sensitive to heat and cold, the stomach rarely if ever, and the colon to a limited extent in a very small proportion of cases.

It has often been suggested that discomfort and pain in the stomach in the absence of organic disease may be due to hyperæsthesia of the mucous membrane, which becomes capable of producing sensations in response to stimuli which are normally without effect. I have had the opportunity of testing this theory in a case, in which it seemed

[7] A. F. Hertz and others: Guy's Hospital Reports, vol. lxi., p. 401, 1907.
[8] James Mackenzie: Symptoms and their Interpretation, p. 125. London, 1909.
[9] A. F. Hertz, F. Cook, and E. G. Schlesinger: Journal of Physiology, vol. xxvii., p. 481, 1908.
[10] R. Zimmermann: Mittheilungen aus den Grenzgebieten der Medizin und Chirurgie, Band xx., p. 445, 1909.

possible that the symptoms might be due to hyperæsthesia of the gastric and intestinal mucous membrane to thermal stimuli. A man, 52 years old, complained of a burning sensation inside his abdomen, which had been present for 30 years, but had recently become almost unbearable. The sensation was constantly present, and was worse in hot weather. Hot food produced an immediate aggravation, and the patient was convinced that he could feel it enter his stomach, which was the chief, but not the only, seat of the burning sensation. For years he had taken nothing but cold food and had been in the habit of drinking iced water at all hours of the day. This always produced a temporary diminution in the sensation of heat, and he obtained a similar result by injecting ice-cold water into his colon. After blindfolding him, we poured very hot and very cold water into his stomach and colon through a double tube; he did not feel the slightest thermal or other sensation. The feeling of heat must therefore have been entirely mental in origin, and the relief given by cold drinks and cold enemata the result of suggestion.

III. SENSATIONS PRODUCED BY CHEMICAL STIMULATION.

1. *Hydrochloric and organic acids.*—The observations[11] which have hitherto been published on the sensibility of the gastric mucous membrane to hydrochloric acid are so contradictory that no reliable conclusions can be drawn from them.

Our own observations show that 0·4 and 0·5 per cent. hydrochloric acid, introduced into the œsophagus or the empty stomach of normal individuals through a tube, produces no sensation of any kind. The introduction of 0·5 per cent. hydrochloric acid through the gastrostomy wound into the stomach of patients with œsophageal stenosis also produces no sensation.

Since the preliminary account of our observations was published, they have been confirmed by J. E. Schmidt,[12] who found that the introduction of from 15 to 30 c.c. of 0·5 to 2·0 per cent. hydrochloric acid through a gastrostomy wound into the empty stomach of three patients and through a stomach-tube into his own stomach produced no sensation.

It is thus clear that the pain, which is often associated with the presence of excess of free hydrochloric acid in the stomach, cannot be due, as has generally been believed, to the excess of hydrochloric acid alone, as it is certain that as much as 0·5 per cent. free hydrochloric acid is never present in the stomach. Moreover, many cases in which excess of free and of active hydrochloric acid is discovered by chemical analysis are not associated with pain or other gastric symptoms, and the excess present in painful conditions may persist after the pain has been completely relieved by treatment. We may conclude that the presence of an excessive quantity of hydrochloric acid in the stomach is only one manifestation of a disease, in which pain is another, and that it is not the cause of the pain.

As 0·5 per cent. hydrochloric acid produces a smarting pain when applied to an abrasion of the skin, it might be expected that it would cause pain when applied to a gastric ulcer. But in six cases, in all of which the diagnosis was confirmed by operation, 4 oz. of 0·5 per cent. hydrochloric acid introduced by a tube into the empty stomach produced no sensation whatever. The same result was obtained in another case, when a mixture of hydrochloric acid with pepsin was used. These observations show that, contrary to the common belief, contact with free hydrochloric acid is not the direct cause of the pain in gastric and duodenal ulcer. That the acid is, however, in some way connected with the production of the pain there can be no doubt, as rapid relief always follows the administration of an alkali. This question will be discussed in detail in a later lecture.

The sensation of heartburn or pyrosis has often been ascribed to the regurgitation of hydrochloric acid into the œsophagus. Our observations, however, negative this theory.

We have found that 1 per cent. lactic acid and 1 per cent. acetic acid produce no sensation when introduced into the œsophagus or stomach. As the quantity present in the severest cases of gastric fermentation is never as great as this, these acids can also have no direct relation to the production of pain or heartburn.

2. *Alcohol and carminatives.*—Our first experiments were done done with *crême de menthe*, and in order to separate the effects of the peppermint from those of the alcohol we also used peppermint water and a solution containing 48 per cent. alcohol with 28 per cent. cane sugar, these amounts being the same as those present in the liqueur. *Crême de menthe*, introduced by a tube into the empty stomach, gives rise to a sensation of warmth which may occur immediately, but more frequently only develops in the course of a minute or two. A similar result was obtained with the 48 per cent. alcohol, but not with the peppermint water, so that it is the alcohol and not the peppermint which produces the sensation after the liqueur is introduced into the stomach. *Crême de menthe* also produces an immediate burning sensation in the epigastrium when poured through a tube into the lower end of the œsophagus. This is a much stronger sensation than that produced in the stomach, but it is impossible to distinguish the locality of the two. The burning sensation in the œsophagus is produced by the alcohol, as the 48 per cent. solution has the same effect, whilst the peppermint water, if warmed to the body temperature, produces no sensation. It may therefore be concluded that the immediate burning sensation produced by the liqueur is in the œsophagus, and that the subsequent feeling of warmth is in the stomach. Both are due to the alcohol alone. It was found that the lower end of the œsophagus is so sensitive to alcohol that special precautions had to be taken in testing the sensibility of the stomach in order to prevent a few drops reaching it when the tube was withdrawn. The tube was kept in the stomach for half a minute after all the fluid had been poured down, and any remaining drops were washed away by a little water before it was removed.

We have confirmed our results by observations on patients, on whom a gastrostomy had been performed for epithelioma of the œsophagus. On pouring a 48 per cent. solution of alcohol by a tube into the artificial opening of the stomach, a sensation of warmth was produced either immediately or after a short latent period. One patient, who had felt nothing when hot water had been introduced, although he was blindfolded and had no idea what was being done, spontaneously stated that the sensation was more like that produced by swallowing spirits than by drinking hot water, and that it could be better described as "burning" than merely warm.

In another man, on whom a gastrostomy had been performed, we found that the introduction of 2 oz. of 5 per cent. alcohol produced a definite sensation of warmth after a latent period of half a minute; the sensation gradually faded away after three minutes. In a normal individual 25 per cent. alcohol produced a burning sensation, but 5 oz. of 1 per cent. alcohol had no effect.

In the patient with bulbar paralysis already referred to, Dr. Johnson and I found that the sensation of warmth in the œsophagus and stomach produced by alcohol was unaffected, in spite of the impairment in the sensibility to other stimuli, which had resulted from the disease of the vagal nuclei. It is possible, therefore, that the sensation of warmth, which is produced by alcohol and which is undoubtedly different in character from that produced by hot fluids, is conveyed by sympathetic nerves and not by the vagi.

Alcohol in a strength greater than 25 per cent. gives rise to a sensation of burning when applied to the mucous membrane of the anal canal, but when introduced into the pelvic colon through a sigmoidoscope or into the more proximal parts through a colostomy opening, a strength of 50 or even 90 per cent. is required. After a sensation of heat has been produced, the repetition of the experiment a few minutes later may have no effect owing to the protection of the mucous membrane by mucus, which is secreted as a result of the irritation caused by the alcohol.

Heartburn is the hot sensation felt in the epigastrium in many cases of dyspepsia. It is frequently accompanied by regurgitation of fluid, which produces a similar sensation beneath the sternum and a sensation of scalding in the pharynx. We have shown that the presence in the stomach or œsophagus of excess of free hydrochloric acid and of the organic acids, which result from fermentation in the stomach, cannot be the cause of these symptoms. The burning sensation produced by alcohol in the stomach closely

[11] S. Talma: Zeitschrift für klinische Medizin, Band vii., p. 407, 1884; M. Löwenthal: Berliner klinische Wochenschrift, Band xxix., p. 1188, 1892; M. Bönniger: Ibid., Band xlv., p. 396, 1908; D. Heineke and M. van Selms: Archives des Maladies de l'Appareil digestif, tome ii., p. 467, 1908.

[12] J. E. Schmidt: Mittheilung us den Grenzgebieten der Medizin und Chirurgie, Band xix., p. 278, 1909.

resembles heartburn, and the stronger sensation it produces in the œsophagus resembles the substernal burning sensation which may accompany heartburn. It seems possible therefore that the alcohols, which may be formed in the stomach in considerable quantity by the action of yeast and sarcinæ on carbohydrates, are the cause of heartburn when present in excess in the stomach, and that their regurgitation into the œsophagus gives rise to the burning sensation which may be felt beneath the sternum in such cases. The scalding in the pharynx is probably due partly to alcohol, but more to the organic acids with which it is commonly associated.

3. *Glycerine.*—It has generally been supposed that the sensation of burning and tenesmus produced by a glycerine suppository or enema is due to its action on the rectal mucous membrane. With the aid of a rectal speculum Dr. Johnson and I found, however, that glycerine produces no sensation when applied to the rectal mucous membrane, and that the characteristic sensation only occurs when it is applied to the anal canal. The sensation produced by a glycerine enema or suppository must therefore be due to a small quantity escaping from the rectum into the anal canal, and the defæcation reflex to which it gives rise probably originates in the anal canal, and not, as formerly believed, in the rectum.

In one individual examined with Mr. Barber glycerine produced no sensation in the anal canal. We found subsequently that a glycerine suppository produced no burning or tenesmus and only the very slightest desire to defæcate. Perhaps a similar insensibility of the anal mucous membrane accounts for the inefficacy of glycerine suppositories and enemata occasionally observed in patients with retention of fæces in the rectum.

IV. THE SENSATION OF FULNESS AND DISTENSION.

The study of the effect of tension on the muscular coats of the hollow viscera is of great importance, as I believe that a large proportion of abnormal abdominal sensations depends upon the stimulation of the sensory nerves of involuntary muscle fibres. Some suspicion of this may 50 years ago have prompted Brinton [13] to write that "the indistinct sensation of the healthy stomach affords us the best clue to the acute sensibility of the diseased one, and allows us to trace a scale—from satiety to repletion; from repletion to distension and weight in the epigastrium; and from hence to the dull, heavy aching of dyspepsia, the gnawing or burning pain of ulcer, and the sharp agony of cancer of the stomach."

1. *The sensation of fulness in the œsophagus.*—With Dr. Hill and Mr. Harrison and with Mr. Barber I have investigated the sensation produced by distension of the œsophagus. A thin indiarubber bag attached to a gum-elastic catheter was passed various distances down the œsophagus in two normal men after the pharynx had been rendered anæsthetic by means of cocaine. When the slight initial discomfort caused by the introduction of the instrument had disappeared, we inflated the balloon by means of a valved pump, the tension exerted on the œsophagus by the distended balloon being measured by a manometer connected with the apparatus. On slowly inflating the balloon a sensation of fulness situated deeply beneath the sternum in the middle line was felt as soon as the pressure reached 44 and 54 mm. of mercury respectively in the two cases. The sensation did not diminish even when the tension was maintained for as long as 15 minutes, and there was no fall in pressure such as would be produced if relaxation of the tone of the œsophagus occurred. The sensation disappeared in three seconds when the air in the balloon was suddenly allowed to escape. When the balloon was slowly inflated to a greater degree so as to exert a higher tension, the sensation of fulness was increased, but its character remained unaltered. In each case a feeling was experienced which suggested that a lump had become lodged in the œsophagus. This seemed to be larger and the sensation was more unpleasant the greater the intra-œsophageal pressure. The sensation of fulness felt as if it were produced in the middle line deeply beneath the anterior surface of the body; it was never felt posteriorly. Its level was accurately recognised, the error never exceeding one inch. At intervals, varying in duration from 10 to 60 seconds, whilst the balloon remained inflated, a rise in pressure of between 30 and 40 mm. was recorded. This was often associated with an increase in the local sensation of fulness, and occasionally a sensation of uncomfortable fulness was also felt behind the cricoid cartilage, from which it passed rapidly down to the position of the balloon, where it reached its greatest intensity; after a few seconds it disappeared without passing any further down. The rise in pressure and the accompanying sensation appeared to be due to a peristaltic wave. No rise of pressure and no change in the sensation followed a voluntary act of deglutition, which does not therefore necessarily result in a peristaltic wave. It seems clear that the presence of a foreign body within the œsophagus gives rise to peristaltic waves originating at its upper end and passing down as far as the foreign body, the waves having the object of dislodging it. Similar peristaltic waves occurred when the balloon was not distended and its presence was unfelt; the pressure never reached the minimal pressure required to produce a sensation of fulness and consequently their passage was not felt.

The sensation of fulness produced by distension of the œsophagus is probably due to tension on the fibres of its circular muscle coat; it is in fact a form of muscle-sense. The sensation appears to be carried by the vagal nerves, as in our patient with bulbar paralysis Dr. Johnson and I found that no sensation of fulness was felt until the tension exerted by the balloon on the œsophageal wall reached 90 mm. of mercury, or approximately twice the normal minimal stimulus.

The sensation of fulness in the œsophagus may be felt under natural conditions. Our X ray observations show that a large bolus of food often passes very slowly down the œsophagus, and may even remain in one position for several minutes. This is apt to occur particularly at the level of the bifurcation of the trachea, as it is at this point that the œsophagus is most narrow. The feeling of pressure behind the sternum sometimes experienced when food is insufficiently chewed may therefore be due to the presence of a solid lump of food, which has become lodged in one position for a considerable time, after which it moves slowly downwards. A similar less prolonged sensation is produced when a single large and hard mouthful of food is swallowed; the common belief that the food has "stuck" in the œsophagus under these circumstances is probably a correct interpretation of the sensation. The sensation disappears after drinking fluid, corresponding with the fact that drinking can be seen with the X rays to dislodge with more or less difficulty a bolus sticking in the œsophagus.

A similar sensation is produced in cases of organic œsophageal obstruction after food has been swallowed, doubtless owing to the distension of the œsophagus immediately above the obstruction. In slight cases it gradually disappears as the food passes on and the distension diminishes, whilst in severer cases relief may only occur after the food has been rejected through the mouth.

It would seem probable that the power of localisation of the muscle-sense in the œsophagus under these natural conditions should be as accurate as it was in our experimental investigations. I have several times observed that when a patient with œsophageal obstruction is given a bismuth meal and is asked to point to the place where the passage of the food seems to be obstructed, the position indicated is within an inch of the level of the obstruction. Similar accuracy of localisation was attained in four-fifths of the 134 cases of cancer of the œsophagus studied by Lamy [14] in Mathieu's clinique. In the remaining fifth, however, the sensation of obstruction or fulness was felt in the upper third of the œsophagus, although the stenosis was really in the lower third. This was doubtless due, as Lamy suggested, to obstruction by a reflex spasm in the cervical region. Thus Dr. Hill and Mr. Harrison tell me that they have found in those cases of cancer situated in the lower third of the œsophagus, in which a sensation of obstruction was felt high up, that a spasmodic contraction was present near the upper extremity, which made it difficult to pass an œsophagoscope without a general anæsthetic.

The sensation of obstruction always gives the impression of being deeply situated in the middle line beneath the trachea, the sternum, or—in the case of obstruction near the cardiac orifice of the stomach—in the epigastrium. One patient, however, with a growth of the cardia felt the sensation equally in the epigastrium and at the same level behind.

[13] W. Brinton: Diseases of the Stomach, p. 44, second edition, London, 1864.

[14] L. Lamy: Archives des Maladies de l'Appareil digestif, vol. iv., p. 451, 1910.

2. *The sensation of fulness in the stomach.*—When an individual is hungry and food is eaten the sensation of emptiness in the upper part of the abdomen gradually disappears, and if the meal is large enough it is gradually succeeded by a feeling of fulness. The more rapidly a meal is eaten the sooner is the sensation of fulness experienced; it is more likely to follow a small meal which has been bolted than a large meal which has been eaten slowly.

With the object of discovering the origin of the sensation of fulness in the stomach, Dr. Johnson, Mr. Barber, and I have investigated its sensory reaction to alterations in intragastric pressure by inflating the stomach of two healthy men with air through a tube connected with a manometer. We found that a sensation of fulness or tightness in the upper part of the abdomen associated with a desire to eructate was felt as soon as the intragastric pressure reached respectively 12 and 14 mm. of mercury in the two cases. The pressure fell after 20 seconds by approximately 2 mm., owing apparently to relaxation of the tone of the stomach, and simultaneously the sensation of fulness disappeared. On now slowly injecting more air the pressure gradually rose to its original height, and the sensation reappeared; it again disappeared after 20 seconds, the pressure simultaneously falling 2 mm., after which it remained constant. Exactly the same rise in pressure and the same sensation of fulness, followed by a fall in pressure and the disappearance of sensation, were produced four times by successively injecting more air, none being allowed to escape in the interval. The sensation was felt deeply beneath the upper part of the anterior abdominal wall in the middle line, nothing being felt behind. Percussion showed that the upper and lower limits of the distended stomach did not accurately correspond with the limits of the sensation.

These observations prove that the tension exerted from within on the circular muscle fibres of the stomach is the cause of the sensation of fulness. Owing to the great variations in the tone of the muscle fibres under different conditions, the volume of contents necessary to produce the tension, which will act as an adequate stimulus to the muscle-sense, varies considerably. In normal individuals, as Moritz[15] was the first to show, the tone can undergo such great variations that the intragastric tension remains between 4 mm. and 6 mm. of mercury whether 50 c.c. or 500 c.c. of food are introduced, so long as the introduction is sufficiently slow to allow the reflex relaxation of tone to occur. Grützner[16] has, however, pointed out that a mere relaxation of the tonic contraction of the fibres of the muscular coat of the stomach is quite insufficient to account for the enormous variations which may occur in the volume of its contents without any accompanying change in the internal pressure. Thus Albert Müller[17] found that the length of the muscle fibres of the filled stomach of a frog was only one and a half to three times that of the fibres in the empty and contracted stomach, although the circumference of the former was five times that of the latter. Grützner had suggested that a rearrangement of the muscle fibres must occur, and Müller found that this was indeed the case, the fibres being arranged in from 15 to 20 layers in the contracted stomach and in only two or three layers in the full stomach.

It follows from the work of Grützner and Müller that the muscle fibres of the stomach are completely relaxed some time before its greatest capacity is attained. Müller and Saxl[18] suggested that the rearrangement of the individual muscle fibres, like the relaxation of their tone, is due to a reflex from the œsophagus during swallowing. It is difficult to see by what nervous mechanism such a rearrangement could occur, and it seems to me much more probable that it only occurs in response to an increase in intragastric tension, and that in man this tension is sufficient to produce the sensation of fulness. When, therefore, an excessive quantity of food is eaten, the sense of fulness is experienced as soon as muscular relaxation is complete; the increase in intragastric tension then occurs which is necessary for the production of a further increase in capacity.

[15] F. Moritz: Zeitschrift für Biologie, xxxii., p. 313, 1895.
[16] P. Grützner: Ergebnisse der Physiologie, Band iii., 2. Abtheil., p. 73, 1904.
[17] A. Müller: Archiv für die gesammte Physiologie, Band cxvi., p. 252, 1907.
[18] A. Müller and P. Saxl: Wiener klinische Wochenschrift, Band xxi., p. 483, 1908.

In normal individuals the sensation of fulness can also be produced by eating very rapidly, as under these circumstances insufficient time is allowed for the reflex relaxation of the tonic contraction of the muscle fibres, and consequently the intragastric pressure rises, and the adequate stimulus is produced.

Under pathological conditions the tone of the stomach may be permanently increased and complete relaxation may be impossible. A comparatively small quantity of food will then cause an uncomfortable sensation of fulness, which can only be prevented by eating very slowly. In a patient recently seen, the walls of the stomach were so infiltrated with growth that they could not relax; the capacity of the stomach was thus extremely small and could not increase as a result of muscular relaxation when the volume of its contents increased. Consequently a very small quantity of food sufficed to produce a rise in intragastric pressure, and the patient complained that almost immediately after he began a meal he felt as full and distended as if he had eaten an enormous quantity.

The sense of fulness, which is a common symptom in patients with atonic dilatation of the stomach, however slowly food is eaten, is due to the muscle fibres being already completely relaxed before any food is taken; the increased dilatation, which has been shown by the X rays to occur as each additional quantity of food enters the stomach, must be due to rearrangement of the muscle fibres, and, as this is only produced by an increase in their tension, a sensation of fulness results. In slighter cases the muscle fibres are not completely relaxed, but complete relaxation occurs as soon as a small quantity of food has been eaten. Any further addition to the bulk of gastric contents will then give rise to a feeling of fulness.

A sensation of fulness in the stomach may thus result from two diametrically different conditions—excessive and deficient gastric tone. The impossibility of distinguishing between these conditions from the nature of the sensation is well illustrated by the fact that among a number of medical men, who have consulted me for what they believed was atonic dilatation of the stomach on account of the sense of fulness they experienced after eating a comparatively small quantity of food, nearly as many were found to have unusually small stomachs as dilated stomachs.

Just as it is impossible to distinguish between the sensation of fulness resulting from tension on tonically contracted or completely relaxed muscle fibres, so is it impossible for a patient to recognise from his symptoms whether the tension which causes the sensation is produced by food or flatulence. I have seen a large number of patients in whom an X ray examination in the vertical position showed that no excess of gas was present, although they complained of fulness in the stomach, which they believed was due to flatulence. As a matter of fact, it is very exceptional for the production of gases in the stomach by fermentation to be sufficiently rapid to produce any increase in intragastric tension, for relaxation occurs, just as it does when food is taken slowly into the stomach. When, however, air is swallowed in excess, as occurs in many patients with nervous dyspepsia, and also, but less frequently, with organic diseases, such as gastric and duodenal ulcer, the quantity of gas in the stomach increases so rapidly that a corresponding relaxation cannot take place, and a rise in tension results. As it is impossible for a patient to distinguish between a feeling of fulness due to tension produced by food and tension produced by flatulence, he generally assumes that it is a result of the latter, and imagines that he can "disperse" it by means of eructation. This is probably the result of an experience, perhaps many years before, in which an attack of acute indigestion, associated with the production of an excessive quantity of gas by fermentation, led to a sense of fulness, which, being really due to gas, was relieved by eructation. Thus some patients who complain of a sense of fulness, which is apparently identical with that felt by the majority of patients who complain of what they believe is flatulence, do not associate the sensation with flatulence, and make no effort to eructate, probably because they have never had the experience of an attack of indigestion with fermentation, in which relief was at once obtained by eructation. When the sense of fulness is not due to gas, the attempt to eructate is naturally unsuccessful, but the attempt may result in the swallowing of air. Often half a dozen or more attempts are made without success, air being swallowed

at each attempt. The feeling of distension consequently increases, until finally the stomach becomes so distended with gas that an attempt to eructate is at last successful, and the feeling of fulness, which is at the end largely due to the increased intragastric pressure brought about by the rapid distension of the stomach with swallowed air, is relieved.

Kelling[19] has demonstrated that a reflex mechanism exists, by means of which the tone of the muscles of the abdominal wall adapts itself to the varying volume of the contents of the alimentary canal. In the absence of such a mechanism the consumption of a meal of moderate size would result in a considerable rise of intra-abdominal pressure and consequently of intragastric pressure. Thus I have found that the volume of the abdominal contents varies between 4000 and 5000 c.c.; after a moderately large meal with a bulk of 1000 to 1500 c.c. the volume of the abdominal contents must therefore increase by 25 to 35 per cent.

When a meal is rapidly eaten it might be expected that there would be insufficient time for the proper relaxation of the abdominal wall as well as of the stomach, and that consequently the general intra-abdominal tension as well as the intragastric tension would be increased. The sense of fulness which results might therefore be a result of tension on the abdominal muscles as well as on the wall of the stomach, and Becher has even suggested that the tension on the various structures of the abdominal wall is the sole cause of the sensation. Such a view, however, cannot be accepted, as the sensation may be felt by an individual whose abdominal wall is so lax that it can never be stretched when he is lying down, however full the stomach may be. Moreover, the exactly analogous sensation produced in the œsophagus and rectum can only be visceral in origin, and our experiments, which I shall describe later, on the sensation of fulness in the intestine prove that this also is independent of the abdominal muscles. A further proof in the case of the stomach is afforded by the result of inflating the stomach by the carbon dioxide given off when solutions of 6 grammes each of sodium bicarbonate and tartaric acid are separately drunk. Under atmospheric pressure at the body temperature 1700 c.c. of carbon dioxide are produced. Kelling[20] showed that in normal individuals the tone of the stomach is such that sudden inflation with from 600 to 1600 c.c. of gas produces a sufficient rise in intragastric pressure to act as an adequate sensory stimulus. The pressure produced by the sudden formation of 1700 c.c. is thus so great that normal individuals invariably complain of an unpleasant and often of a painful sense of fulness, which is relieved by eructation. On the other hand, in patients with atonic dilatation the tone of the muscular coat of the stomach is so feeble that the potential capacity of the stomach, even when empty, is more than 1700 c.c., and consequently this volume of gas produces no rise in intragastric pressure. If the sense of fulness depended upon stretching of the abdominal wall, it would follow inflation of an atonic stomach, as the volume occupied by the gas is greater than in the normal stomach owing to the smaller intragastric pressure, but no sensation of fulness is felt, and the patient may actually feel more comfortable after the inflation. It may therefore be concluded that the sensation of fulness in the stomach is due to tension on its muscular coat and depends very little, and only in extreme cases, on stretching of the abdominal wall.

[19] G. Kelling: Zeitschrift für Biologie, Band xliv., p. 161, 1903.
[20] G. Kelling: Deutsche medizinische Wochenschrift, Band xviii., p. 1191, 1892.

GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—The annual meeting of the subscribers to the Gloucestershire Royal Infirmary was held recently under the presidency of Colonel Curtis Hayward. The medical report stated that 1520 in-patients had been admitted, a decrease of 70 compared with 1909, but with that exception it was the largest that had been admitted in one year. The daily average number of in-patients was 86·8, and the average cost per bed £75 7*s.* 10*d.* The out-patients numbered 9302, the largest on record. The financial statement showed that workpeople's contributions amounted to over £1000, and that an adverse balance of £348 remained against the charity.

Edward Jenner Lecture

ON

THE DECLINING BIRTH-RATE.

Delivered at St. George's Hospital Medical School (University of London)

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GENTLEMEN,—This question of the birth-rate is taken for our first lecture as furnishing a good and concrete example of a problem in vital statistics.

The numerical maintenance of any geographic population must depend on the balance of four factors—namely, birth plus immigration, less death and emigration. In most statistical countries the population is actually increasing at the present time. This "actual increase" is ascertained by census—in our country every ten years. "Natural increase," on the other hand, is the increase by births against deaths, without taking count of the figures of migration. It is reckoned from the births and deaths registered by the Registrar-General through the sub-registrars; the birth-rate per thousand of population per annum less the death-rate per thousand per annum gives the rate of natural increase.

MIGRATION.

The difference, then, between actual and natural increase is due to migration, and is in some countries very great. Chart 1 is founded upon a chart in the celebrated report in 1904 of the Royal Commission that inquired into the declining birth-rate of New South Wales. The mean natural increase of the several parts and the whole of Australasia and of other countries during the decade 1890 to 1899 is shown as so many black lines of length, corresponding to the difference between their respective crude birth- and death-rates accordingly. The shaded lines show the mean actual increase for the same years. Where the shaded lines are longer than the black, immigrants have outnumbered emigrants. Where the shaded lines are shorter, emigration has prevailed. Emigrants are, presumably, above the average in fitness and procreative power. A land, therefore, like Ireland or Italy, which loses emigrants suffers further in retaining a disproportionate number of the unfit and aged. (The shaded line opposite Ireland should run from right to left, about as long as the black line runs from left to right. It has had to be omitted in making the chart.) In Canada, on the other hand, and in the United States the population contains a disproportionate number of immigrants whose fertility veils the lesser fertility of the native-born. Unfortunately, North American statistics are incomplete and, as a rule, untrustworthy. But in Boston the corrected legitimate birth-rate for native-born in 1900 was 18·20, for foreign-born 31·06; in Rhode Island, for native-born in 1901 17·01, for foreign-born 30·96. Even the natural increase, therefore, of any geographic population, touched by migration, is no exact measure of its fertility. Migration has a selective or qualitative as well as a numerical effect on the birth-rate.

NATURAL INCREASE.

The following are the rates for England and Wales in every other period of five years during the last 60 years:—

	Quinquennia from						
	1851.	*1861.*	*1871.*	*1881.*	*1891.*	*1901.*	*1910.*
Birth-rate ...	33·9	35·2	35·5	33·5	30·5	28·1	24·8
Death-rate ...	22·6	22·5	21·9	19·4	18·7	16·0	13·4

It generally happens that a high death-rate accompanies a high birth-rate, and a low death-rate a low birth-rate. But to this there are striking exceptions, showing that the relation between these two ratios is not one of cause and effect. The statement holds good for most countries in Chart 1; although in the Australasian colonies, with a birth-rate fairly high, the death-rate last decade rules low in comparison with European countries, there is a rough conformity between the birth- and death-rates amongst the different colonies themselves. France, however, is an exception, with a

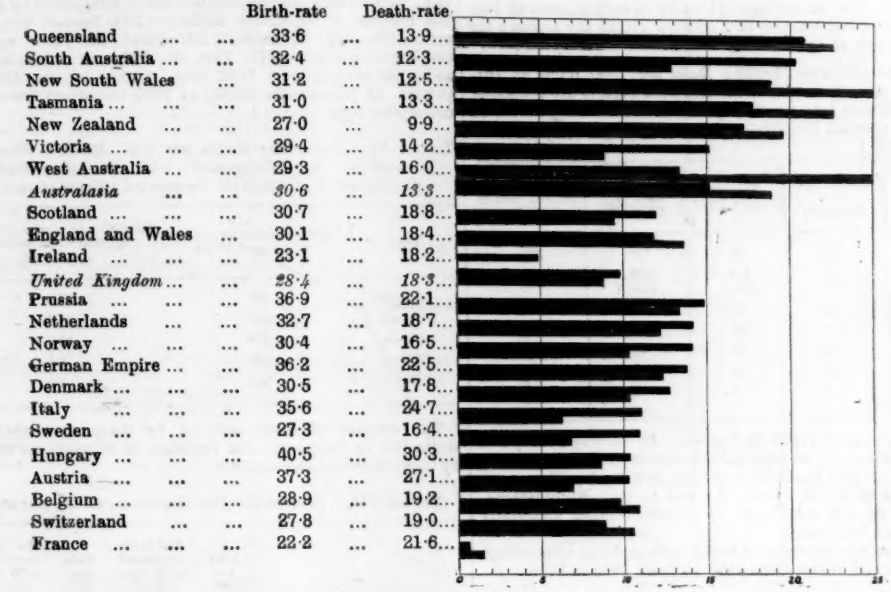
low birth-rate and a high death-rate. Here a continued low birth-rate has resulted in the comparative depletion of the earlier, stronger ages of the population, and the death-rate is for a time raised. So will it be with every country, so with England and Wales, when the present decline of the birth-rate has lasted sufficiently long and has sufficiently affected the age-constitution of the population to counterbalance the decline of the death-rate which is due to other causes. In England and Wales the birth-rate has declined by over 10 per 1000 during the last 35 years. In other words, on an average population of about 30,000,000 there has been a total loss to the nation from this cause alone of 175 per 1000—some 5,250,000 persons. What war, what pestilence, what fault in political, legal, or social activity has ever caused such a loss to our man-hungry Empire?

Moreover, this scourge shows no sign of abatement. So long, no doubt, as the death-rate continues to fall, the "natural increase" continues. But the fall of the death-rate is limited; that of the birth-rate is unlimited. A permanent corrected death-rate of 10 per 1000 would mean an average of 100 years' life to every infant born into the world. It is hardly conceivable that the death-rate can be for long maintained below a rate of 15 per 1000. The birth-rate, however, may continue to fall. Nothing need prevent the gradual diminution of families. Chart 2 shows the variation of the birth-rate in some of the chief civilised countries; while the figures in 1881 and in 1909 for 12 out of the 34 countries whose statistics are available and of chief interest to our present purpose are shown in Table I.[1]

TABLE I.—*International Comparison of Crude Birth-rates in 1881 and 1909.*

Countries.	1881.		1909.	
	Birth-rate.	Relative position.	Birth-rate.	Relative position.
Russia	47·8	1st.	48·4	1st (1904).
South Australia	38·6	6th.	24·7	31st.
Italy	38·0	7th.	32·4	12th.
New Zealand	37·9	8th.	27·3	20th.
Austria	37·5	10th.	33·5	10th (1908).
Spain	37·1	12th.	32·6	11th.
German Empire	37·0	13th.	32·1	13th (1908).
United Kingdom	32·5	23rd.	25·5	28th.
Ceylon	27·1	30th.	36·7	7th.
Japan	25·6	31st.	33·9	9th (1908).
France	24·9	32nd.	19·6	34th.
Ireland	24·5	33rd.	23·5	33rd.

CHART 1.—INCREASE RATES IN BIRTHS AND DEATHS OF POPULATION, 1890–1899.


Birth-rate
Death-rate
Queensland ... ... 33·6 ... 13·9...
South Australia ... ... 32·4 ... 12·3...
New South Wales ... 31·2 ... 12·5...
Tasmania ... ... 31·0 ... 13·3...
New Zealand ... ... 27·0 ... 9·9...
Victoria ... ... 29·4 ... 14·2...
West Australia ... ... 29·3 ... 16·0...
Australasia ... ... 30·6 ... 13·3...
Scotland ... ... 30·7 ... 18·8...
England and Wales ... 30·1 ... 18·4...
Ireland ... ... 23·1 ... 18·2...
United Kingdom ... ... 28·4 ... 18·3...
Prussia ... ... 36·9 ... 22·1...
Netherlands ... ... 32·7 ... 18·7...
Norway ... ... 30·4 ... 16·5...
German Empire ... ... 36·2 ... 22·5...
Denmark ... ... 30·5 ... 17·8...
Italy ... ... 35·6 ... 24·7...
Sweden ... ... 27·3 ... 16·4...
Hungary ... ... 40·5 ... 30·3...
Austria ... ... 37·3 ... 27·1...
Belgium ... ... 28·9 ... 19·2...
Switzerland ... ... 27·8 ... 19·0...
France ... ... 22·2 ... 21·6...
0
5
10
15
20
25

Shaded lines show actual increase per 1000. Black lines show natural increase per 1000.

The fall in Australasia is remarkable; for whereas 40 years ago the birth-rate in these seven colonies varied from just below 30 in Tasmania to over 40 in Queensland and New Zealand, in 1909 it varied only between 24 and 30. But in the United States the decline is declared by Dr. J. S. Billings of New York, one of the chief American authorities on vital statistics, to be greater than in any other country. Of all the 34 countries Japan alone has risen from 31st to 9th, despite a slight fall in 1903–05 and a sharp fall in 1906, doubtless due in the main to the Manchurian war. Japanese patriotism will do much to maintain her birth-rate.

[1] Registrar-General's Annual Report, 1909, p. 112.

"CORRECTION" OF BIRTH-RATE.

In order now to distinguish between the several causes of this decline and arrive at a measure of true fertility we must dissect and "correct" our crude rates. Unfortunately the system of English birth-registration, from which these figures are derived, is established for legal and not statistical purposes, and fails to give information on four important facts which must be taken into account in considering the birth-rate. An improved system of birth registration, following the example of certain other countries, would give us the facts in connexion with every birth as to (1) the age of the mother; (2) the number of previous conceptions; (3) and of still-births; and (4) the interval since the last birth. Figures derived from such a system of registration might give a true guide to actual fertility. Meanwhile, however, we can divest our birth-rate of certain side issues.

PROPORTION OF WOMEN AT CONCEPTIVE AGE.

In every 1000 of the population the number of females aged 15 to 45 in my own county of Hertfordshire, for

instance, rose from 210 in 1881 to 234 in 1901, in London in the same years from 262 to 274. Instead, therefore, of stating the birth-rate in terms of total population, it is obviously more precise to state it in terms of women aged 15 to 45.

ILLEGITIMACY.

There is a greater decline in illegitimate than in legitimate births. Thus in England and Wales in 40 years the crude birth-rates have sunk as follows:—

	1861.	*1871.*	*1876.*	*1881.*	*1891.*	*1901.*	*1909.*
Legitimate ...	32·4	33·0	34·6	32·2	30·1	27·4	24·6
Illegitimate ...	2·2	2·0	1·7	1·7	1·3	1·1	1·0

This decline of illegitimate births may be due to improvement in morals or to increased knowledge of and opportunities for practising methods of preventing conception or procuring abortion after illicit intercourse. Inclusion of illegitimate births obviously introduces a confusing factor in special degree; they are best excluded from a statement of fertility.

AGE AT MARRIAGE.

The fertility at different ages is shown in the number of births per annum per 1000 wives at each period of life. These figures are obtainable only where a more complete system of registration obtains than in England and Wales. In certain towns and countries the relative fertility at each age, taking that at the age 20 to 25 in each column as 100, works out as follows, the last column giving the average for the seven sets of figures from which these are selected:—

TABLE II.—*Relative Fertility Rates per 1000 Wives at Different Ages in Certain Areas where the Figures are available, the Fertility-rate for the Age Period 20–25 being taken as 100. (Actual Fertility-rate per 1000 Wives aged 20–25 in Brackets.)*

Age of mother.	Edinburgh and Glasgow.	Norway (1874–76).	Denmark (1880–89).	Average, excluding Berlin and Budapest.
15–20 ...	120	71	145	108
20–25 ...	100 (418)	100 (579)	100 (494)	100
25–30 ...	83	74	82	81
30–35 ...	64	62	63	66
35–40 ...	49	52	47	52
40–45 ...	19	31	23	27
45–50 ...	3	6	3	4

This table may be read as follows. In Norway 1000 wives aged 20–25 have on an average 579 infants in a year; putting this figure at 100 the corresponding fertility for Norway at ages 15–20 is 71; at 25–30, 74; and so on. Fluctuations, therefore, in the mean age at marriage must materially influence the birth-rate.

Now let us see the facts as to the increased age at marriage in England and Wales during the 14 years 1896 to 1909.

TABLE III.—*Mean Age at Marriage—England and Wales.*

Year.	All husbands.	Bachelors.	Widowers.	All wives.	Spinsters.	Widows.
1896	28·43	26·59	44·49	26·21	25·08	40·58
1909	28·88	27·29	45·93	26·69	25·73	41·27

Some slight allowance must therefore be made for the increased age at marriage before we can arrive at a true fertility-rate.

NUMBER OF MARRIAGES.

Still more obviously must the birth-rate be affected by the number of marriages that take place.

TABLE IV.—*Mean Annual Marriage-rate—Persons undergoing marriage per 1000 marriageable persons (unmarried and widowed persons over 15).*

—	1870–2	1880–2	1890–2	1900–2	1903–7	1908	1909
England and Wales ...	57·2	51·5	49·8	48·7	47·4	45·6	44·5

This shows a decrease in 38 years of 12·7, or 22 per cent. The decline in the marriage-rate is reflected in the proportion of unmarried, married, and widowed over 15 years of age of either sex in the populations of successive years, as found by the census.

TABLE V.*—*Married State, Proportion to 1000 of each Sex above 15.*

—	Males.		Females.	
	1871	1901	1871	1901
Unmarried	384	411	361	395
Married	559	536	523	497
Widowed	57	53	116	108

* In this and following tables, unless otherwise stated, rates refer to England and Wales per 1000 per annum.

This factor, obviously voluntary, must also be discounted with a view to obtaining a true measure of fertility.

FERTILITY RATE.

Now three of these four factors in the decline of the crude rate—proportion of women at conceptive age to total population, illegitimacy, marriage-rate—can be eliminated by giving the number of legitimate births per 1000 married women of conceptive age, a method introduced 50 years ago by the Registrar-General, Dr. Farr, the father of public health, as he has been called. With them we may contrast the proportion of illegitimate births to 1000 unmarried women of conceptive age.

TABLE VI.—*Legitimate Births per 1000 Married Women of Conceptive Age Contrasted with the Proportion of Illegitimate Births to 1000 Unmarried Women of such Age.*

Year.	Legitimate births per 1000 wives aged 15–45.	Illegitimate births per 1000 spinsters and widows aged 15–45.
1870–72	293	17·0
1880–82	286	14·1
1890–92	264	10·5
1900–02	236	8·5
1909	209	7·[illegible]

The amount of error avoided by these corrections is suggested by comparing the decrease in 30 years, as shown by these different calculations.

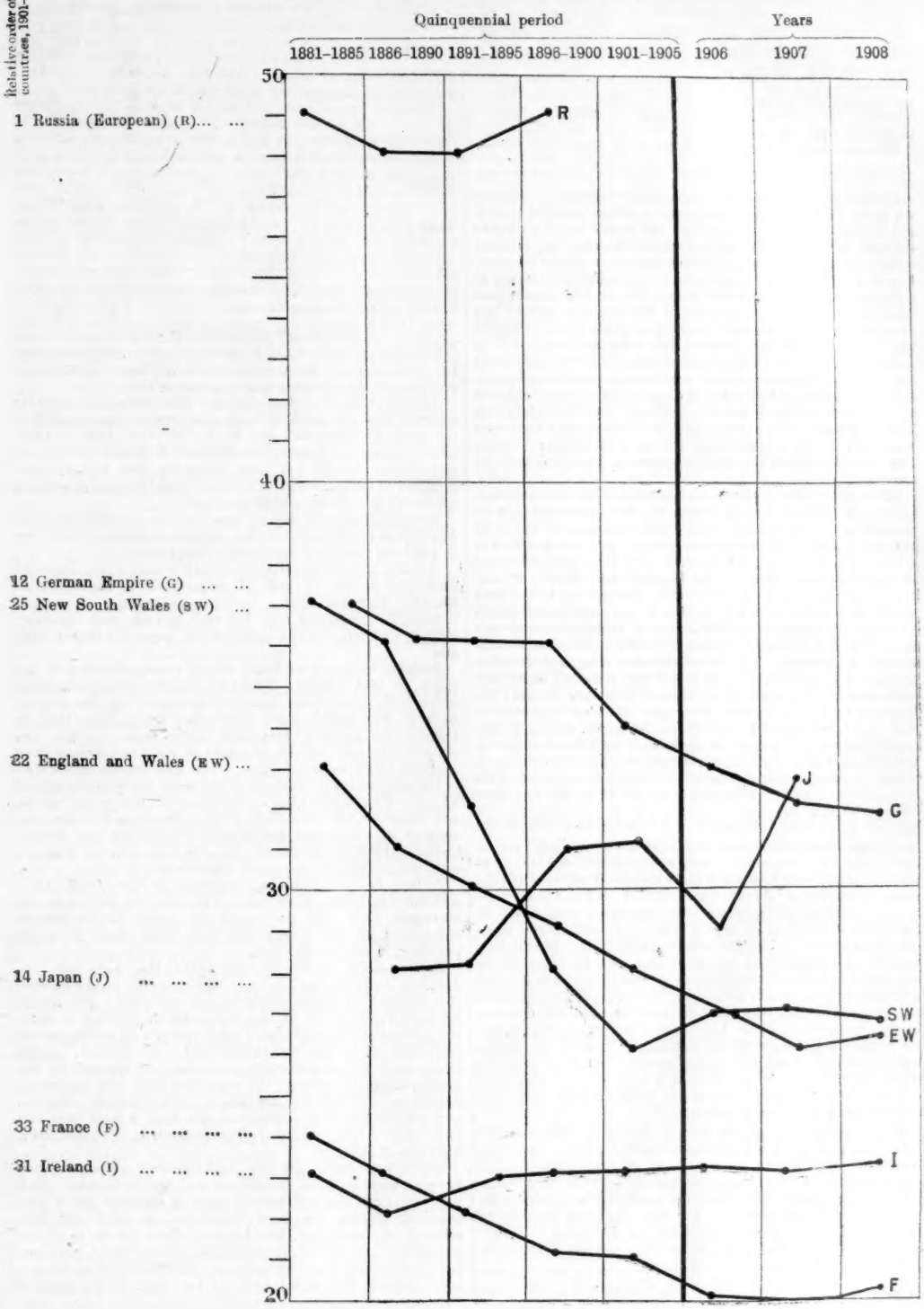
TABLE VII.—*Contrasting Fertility-rates and Birth-rates.*

—	Rate per 1000, 1909.	The same compared with rate 1876–80 taken as 100.	Rate per 1000, 1901–05.	The same compared with rate 1876–80 taken as 100.
Legitimate fertility-rate—(births per 1000 wives 15–45)	209	71	230·7	77·
Illegitimate fertility-rate—(births per 1000 spinsters and widows 15–45)	8	55	8·4	58·3
Total fertility-rate—(All births per 1000 women 15–45)	102	67	112·5	73·4
Crude birth-rate—(All births per 1000 population)	26	73	28·1	79·6

This table shows, curiously enough, that the decline in fertility is even greater than that in the crude rate. Although fewer marriages and the decline of illegitimate births have led to a decline of the crude birth-rate, this effect has been more than discounted by the larger proportion of women of conceptive age in the population. Their fertility has declined even more than we suspected. The discrepancy between these methods of stating the birth-rate may be shown by comparing the figures obtained in each case for

CHART 2.—ANNUAL CRUDE BIRTH RATES PER 1000 PERSONS LIVING, 1881–1908.

(Registrar-General's Annual Report, 1909, p. 111.)



Kensington with those obtained for Whitechapel in any one year:—

TABLE VIII.—*Three Methods of Showing Birth-rate, 1891.*

Legitimate rates.	Kensington.	Whitechapel.	Ratio per cent. K. : W.
Crude birth-rate per 1000 inhabitants	21·8	39·9	55
Fertility-rate per 1000 women, 15-45	61·6	172·1	36
Fertility-rate per 1000 married women, 15-45	215·4	328·3	66

Obviously it makes a fundamental difference whether we speak of the rate in Kensington as 66 per cent. of that in Whitechapel, or 55 or only 36. 66 is the result by Farr's method and gives the actual mean fertility of married women. But even Farr's method does not correct *the error due to a different age-constitution*, to women now marrying at a higher and usually less fertile age. To do this Newsholme, now medical officer to the Local Government Board, and Stevenson, now Superintendent of Statistics in the Office of the Registrar-General, devised the following method,[2] by which standard birth-rates are devised, as by the usual method of calculating standard death-rates—rates comparable on a common basis as regards the age and number of wives in the population of each district or county. Our English census has not hitherto given us the age of the mother at each confinement; it has only given us the ages of married women. The Swedish census, however, has given us the age of mothers at confinement.

Taking, therefore, the figures obtained by the complete system of registration of births at each maternal age in Sweden as the fixed standard, we find the rate of births to the number of wives at each quinquennium of age in Sweden, say in 1891, and apply these rates to the number of wives at each quinquennium, say in England and Wales, in any census year. We thus obtain the number of births that would have occurred in any year in a population constituted like that, for instance, of England and Wales as regards age and number of wives, but under the 1891 Swedish conditions of relative fertility. This number, when compared with the number of the population, is called the standard legitimate birth-rate for the area in question. This rate in 1901 for England and Wales was 34·9 per 1000 of population; that for Hertfordshire was 29·7. In other words, if the conditions as to fertility in each case had been those of Sweden in 1891, the factor relating to age and number of wives in England and Wales in 1901 as compared with Hertfordshire would have been as 34·9 to 29·7. Now $\frac{34·9}{29·7} = 1·1754$. 1·1754, then, is the factor by which, if the crude legitimate birth-rate of Hertfordshire for any year be multiplied, a "corrected" rate is obtained, strictly comparable in respect of the age and number of wives with the crude birth-rate of England and Wales. Thus it is a "corrected" rate of 27·6, rather than the crude rate of 23·4, by which the fertility of Hertfordshire in 1901 may be compared with that for England and Wales of 27·3. In this way factors for correction of the birth-rate may be obtained for any district, group of districts, or country, and such factors, multiplied by the crude birth-rates, will give the corresponding corrected legitimate birth-rates. The need of this correction is shown by Table IX. Many deductions that might be made from the commoner method of stating the birth-rate are at once negatived by the corrected rates. The crude rates, for instance, for Hertfordshire both in 1881 and 1901 are far lower than any other crude rates on this table, but the corrected rates are the highest.

Where possible, then, we should deal only with corrected rates—they alone are a true measure of fertility; and such corrected rates should be made out in every district after every census. In their absence deductions from rates calculated in any other way must be made and expressed with reserve. May we therefore ask the Registrar-General to supply every district with the factor for correction? Meanwhile, the best measure to use for common statistical purposes is the legitimate fertility rate or number of births to 1000 wives of conceptive age.

[2] Journal of Hygiene, vol. v., April, 1905.

TABLE IX.—*Contrasting Crude with Corrected Birth-rates.*

—	Year.	Legitimate birth-rate.	
		Crude.	Corrected.
England and Wales	1881	32·2	32·9
	1901	27·3	27·3
Selected urban counties	1881	34	32
	1901	29	27
Selected rural counties	1881	29	34
	1901	24	28
London	1881	33	31
	1901	27	26
Herts	1881	28	35
	1901	23	28

CAUSES OF REDUCED FERTILITY.

The general tendency of all these rates is a marked decline. Let us consider to what causes their decline in various communities during the past 20 years may be due.

Urbanisation is not a factor. The corrected rate for selected urban counties—27—is now barely lower than that for rural counties—28; and in the 22 years, 1881 to 1903, while the rate for London has declined by 16 and for England and Wales by 17 per cent., that for four typical rural counties of Beds, Berks, Cornwall, and Rutland showed a decline of 23, 21, 29, and 28 per cent.

Occupation as such has no clear relation to the birth-rate. Agricultural counties had the highest fertility in 1881, but in 1903 the difference had almost disappeared.

Woollen industries certainly coincide with a low corrected birth-rate of 23, 21, and 22 respectively in Huddersfield, Halifax, and Bradford; but the percentage of women industrially employed does not vary directly with the rate. Mining districts, on the other hand, generally show a high rate.

Religion, on the other hand, affords some indication of the cause of this decline. Countries mainly Roman Catholic differ little from those mainly Protestant; but the rate in Bavaria has shown little diminution since 1881, that in Ireland has actually increased, while those in the less orthodox Roman Catholic countries of Italy and France have continued their steady decline. The best comparison is that of Canada, where in 1902 the Protestants had a crude rate of 24, the French Canadians—being strict Catholics—of 44, and other Roman Catholics of 22. Measures for the prevention of conception are strictly banned by the Roman Catholic Church, as indeed by our own but, at least in orthodox countries, with greater authority.

It may be said that the proportion of *men serving their country* or pursuing trade abroad for part of their time has increased. But the proportion of males to females as calculated by the census has only fallen from 95 to 93 per cent. in the last 50 years.

As to *social conditions*, no doubt the birth-rate has declined, both in England and Germany, for instance, with the increase of social comforts. In comparing the figures for six different strata of the population in London in 1903, the total corrected birth-rate varied between 32 in the poorest class and 20 in the wealthiest class. In Ireland, on the other hand, where preventive measures are banned by the Roman Catholic Church, the corrected rate has increased, despite her share of the increase in social comfort. Bavaria and France are both prosperous, one with a high rate, the other with a low. Norway, like Ireland, is poor, but has a high rate of fertility.

Heron has made out the mathematical correspondence between various social conditions and the birth-rate. As a result he finds the birth-rate lowest in districts where professional classes are most numerous or many domestic servants are employed, and highest where labour is of the lowest type, or poverty, drunkenness, overcrowding, phthisis, and pauper lunacy are highest, and thrift and culture least. Karl Pearson has shown that 25 per cent. of the married

population produce 20 per cent. of the next generation. The nation is being recruited from its least prosperous, least successful classes in increasing degree. From every point of view save that of the anarchist, it is the least fit classes of men that survive. If there be such a thing as heredity, the nation is undergoing racial degeneration.

Do the facts, then, indicate a *decline in natural fertility* under more civilised or luxurious conditions? It would be strange if that were so, for the birth-rate was at its zenith in 1876. Luxurious living was common before then; even the wealthier classes produced families of a dozen or more, and those dozen now only produce a dozen infants between them. The Royal Commissioners who inquired into the subject in New South Wales found no evidence of any increase of physiological sterility in the women of the colony. The matter cannot yet be taken as proved. Instances of barrenness or of one-child families, where parents are perfectly healthy, are anxious for children and have used no checks, occur not infrequently. I can vouch myself for two or three cases amongst medical men, on whose word one may rely. Quite recently a well-known peerage was saved from extinction by the birth to healthy parents of a son and heir 11 years after a second marriage, where there had been three daughters by the first wife. But has this not ever been so? What is the extent of this lesser natural fertility in some "higher class" families? This we can only know through the family doctors and possibly the obstetricians. I should be grateful to them for any instances or information on the subject.

THE ARTIFICIAL DECLINE.

Any decline, however, that there may be in natural fertility is insignificant as compared with the artificial decline. The evidence is overwhelming, to quote again from the New South Wales report, as to "the marked effect of a force adverse to reproduction; and this force was one over which the individuals themselves have control." It is a voluntary limitation of the birth-rate with which we have in the main to deal. There are two methods: prevention of conception and destruction of fœtal life; rubber goods and chemical pessaries on the one hand, abortifacients and spurious nursing homes on the other. Both methods flourish; both should be relentlessly pursued and checked by the law. It is significant that it was in 1876 that the Bristol publisher of an American pamphlet describing these methods under the title "Fruits of Philosophy" was sentenced, and Charles Bradlaugh and Mrs. Besant aggressively republished and circulated the pamphlet; and that in 1877 began the decline of the British birth-rate which has continued since.

The chief factors, then, in the decline of the birth-rate are mechanical and logical. The mechanical factors just named are in reality only methods. It is the following logical factors that are the ultimate cause.

A. In the interests of health wives are advised to secure a two or three years' interval after the first and each subsequent birth; and after any severe confinement to avoid similar danger in the future. It is often this well-meant interval after the first birth that effects the mischief.

B. With the higher education of women comes an increasing habit on their part, both before and after marriage, of undertaking charitable, political, or other occupations, paid or unpaid, which it seems difficult, even selfish, and at least unreasonable for the young wife to abandon. Often in her desire to help her husband, intellectually and socially, it seems to her a duty to direct her seasons of child-bearing accordingly; and this well-meant interference has unforeseen results.

C. The desire for economy strikes at all parents in every class, and especially in that class—the wealthiest—which has the largest experience of converting money into power and opportunity of every kind. Such power and opportunity will perhaps be lost through another child, whereas they may otherwise be used for the education or physical welfare of the children already born or for their "start in life" on completion of their education; or they may be required for the serious aims and life's work of the husband; or for the competition to keep or improve the position and authority of the family in the class of society to which it belongs or wishes to belong. Lastly, and no doubt only in a minority of cases, the primary object is that of leisure, comfort, and the avoidance of pain.

This desire, whether for economy or comfort, depends essentially upon the unfettered Darwinian principles of the struggle for survival of the fittest; it is a recrudescence of Nature's method for natural selection, rendered possible by the free interchange of information, as a result of the steam-engine, electricity, cheap printing, and the penny post; fostered by the time-honoured liberal principles of *laisser-faire* without the correcting factors of sound scientific knowledge and rigid moral discipline. Free play of natural forces, as developed by the inventions of the nineteenth century, has led by inevitable if superficial logic to the decline of the birth-rate. Sound scientific knowledge of itself only directs into certain grooves and does not check this decline. Rigid moral discipline is hardly possible, except as part of a religious code; while scientific thought and the liberal tendencies of the last century have unhappily done much to destroy discipline and undermine religious authority. On the other hand, there must be noted the newer growth of athletic discipline, the cult of a healthy body, which, combined with the sounder scientific knowledge of the last few years and saner views of moral and religious discipline, may lead the civilised world to recognise and check the material dangers that accompany the abuse of nature in her most vital and essential activities.

What, then, are the effects on the potential parent of this voluntary prevention of conception and this practice of abortion? The direct physical effects are considerable. In his presidential address to the British Gynæcological Society in 1904 the late Professor J. W. Taylor spoke of both sudden danger and of chronic disease, especially chronic nervous disorders, as common results. In commenting in his annual report on the prosecution of a woman abortionist for manslaughter at the Nottingham Assizes in 1906, Dr. P. Boobbyer, the medical officer of health, described the effect of diachylon or lead oleate plaster, much used for this purpose in the Midlands, as often producing abortion, but always lead poisoning, leading in a large proportion of cases to paralysis, blindness, insanity, and even death. It is noted again that ovarian and uterine tumours, innocent and malignant, coincide largely with the practice of restriction. Above all, it is a commonplace in gynæcological practice that when a woman who has practised restriction wishes to have a child she is frequently unable to conceive, at least for some months or even years.

The direct and moral effects are even more serious. The practice of prevention is a check on nature's check to sexual intercourse; it tends unconsciously to sexual excess and habituates the being to general self-indulgence. Parental qualities are not stimulated and the children lose the discipline and delights of a full nursery. Wives, being thus set more free of home-ties, take up other occupations, and, indeed, in the struggling classes, are in increasing extent chosen according to their wage-earning capacity. Woman is thus pushed out from her natural sphere of home-life into the outside world; and man takes the advantage of it. Hence the decay of home-life, the decline of chivalry, the claim for female suffrage.

The national effects are best shown in a quotation from Polybius, for history repeats itself:—

> In our times all Greece has been afflicted with a failure of offspring. ..... For when men gave themselves up to ease and comfort and indolence and would neither marry nor rear children born out of marriage, or at most only one or two, in order to leave these rich and to bring them up in luxury, the evil soon spread imperceptibly but with rapid growth. ..... And there is no need to consult the gods about the mode of deliverance from this evil; for any man would tell us that the first thing we have to do is to change our habits, or at all events to enact laws compelling parents to rear their children.

Whether by abortion, by infanticide, or by prevention, the limitation was effected and its result was the decay of Greece. The same cause it was, according to Sir John Seeley, that brought about the decay of Rome:—

> The invincible power had been tamed by a slow disease. Rome had stopped from a misgiving she could not explain to herself in the career of victory. She had centralised herself successfully and created a government of mighty efficiency and stability. But against this disease she was powerless; and the disease was sterility. Men were wanting; the empire perished for want of men.

With all extinct races the birth-rate must either have fallen to zero, as we see now happening with the Red Indians and Australian aborigines; or, on its way thus to extinction, the race is swallowed up by intermarriage and its elements of permanence retained in fusion with the qualities of stronger breeds. So must it have been with Rome and Greece, Carthage and Egypt, Hittites, Cretans, Assyrians, and every mighty nation in the history of the world.

The same fell disease affects the British Empire to-day;

and vast territories committed to her charge are lying fallow for lack of those men whom, through the insidious temptations of comfort or through unsound reasoning in the name of science, she has deliberately failed to produce. Those men and women unborn may well have included in their numbers potential inventors and rulers, artists and writers, prophets and priests of unknown power. The whole world is deprived of them. The empire is the weaker for their loss. And, alas, this is no mere numerical decline. We have seen that it is a decline also in quality, due, as Karl Pearson has shown, to a reduced net fertility in the more cultured, more prosperous, healthy, and thrifty classes of the community. The British race in its struggle for survival is killing off the fittest stocks and leaving the less fit in ever-increasing ratio to perpetuate their defects.

How, then, can we fight this disease and save for the individual, the empire, and the whole world the benefit of Nature's full human harvest? Such physiological causes as there may be for this decline are beyond our ken, and for the present, if they exist at all, must be left alone; however serious to those they affect, to the nation, I believe, they are of minor importance. The chief and obvious factors are three in number: (1) the rational, due to knowledge of methods of prevention and ignorance of its results; (2) the economic, due to the inventions of the Victorian era and the consequent freedom of communications and competition in every phase of life; and (3) the moral, due to indulgence and lack of discipline.

With the economic and moral factors medical men have only indirect concern. But against the rational factor we are responsible for the remedy. Both personally and in public we must insist, as no other profession can, on the paramount value of nature's own methods and checks, on the serious danger resulting from celibacy, from prostitution, from interference with the normal married life, from disregard of nature's seasons; and not least on behalf of all concerned on the healthy influence, the gaiety, and the ultin ate economic value of a well-stocked nursery.

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NOTES ON SOME VICTIMS OF A RECENT RAILWAY ACCIDENT, WITH SPECIAL REFERENCE TO CEREBRAL FAT-EMBOLISM.

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MANY of the victims of the Willesden railway accident of Dec. 5th, 1910, were brought to University College Hospital. The casualty-room presented a most unusual appearance, being literally filled with more or less severe accident cases. Nineteen of these were admitted to the wards, and as some of them presented points of interest we desire to put them shortly on record.

The accident, it will be remembered, was caused by one train running at a moderate speed into the rear of another which was standing at the platform. Photographs show that the bogie of the last carriage was driven under that of the last carriage but one for about half its length. The four last wheels of the latter were detached, but the carriage itself, with its front wheels attached, was lifted up and turned partly over on to the platform. The telescoping thus involved at least six compartments. The occupants of those of the last carriage but one were spared the dreadful impact of the advancing bogie of the rear carriage; but it is difficult to imagine how many of those in the last carriage can have escaped fracture of both their legs, unless they adopted the plan which is usually recommended under such circumstances of putting their feet on the opposite seat. It is probable, however, that the injuries were not produced in this way, but that the floors of both carriages were raised above the bogies, as otherwise the injuries would have been more severe than they actually were. They were probably mostly caused by the seats and the splintering of the floors. An attempt was made to ascertain which compartments suffered most, but the patients were not always able to state which carriage they were in. Two points are, however, clear. The greater number of the cases admitted were in the last carriage, and all those who had broken legs were sitting with their backs to the engine, but one of them had risen from his seat before the crash came and his one broken leg was between those of his brother who had both legs broken. This may, of course, be only a coincidence. It will be noticed that most of these fractures were about the middle of the bones. The other patients of whom the inquiry was made, but it was not ascertained in all cases, were sitting the other way. One of these had a thyroid dislocation of the right hip-joint. He had just settled himself in a comfortable position, "as usual, with his thighs apart." There could not be a more favourable position for the production of this rare accident. He thinks the seats were forced upwards; he was in the sixth compartment of the last carriage and was pinned amongst the débris with two or three passengers on the top of him. It was easily reduced by manipulation. Both this patient and at least three others had effusion probably of blood into one or both knee-joints. One of those in the last compartment of the last carriage but one, besides having both bones of the right leg broken, sustained bruises of the face and chest, and the somewhat uncommon fracture of the clavicle at the junction of the inner and middle thirds with slight displacement backwards of the outer fragment. Like the other occupants of this carriage, he was thrown over towards the platform side, and indeed was actually lying on the platform on his back, the door being off, and his feet pinned under the seat. Another rare fracture was found in one of the fatal cases—namely, a separation of the cribriform plate of the ethmoid from the frontal. Of this we only know of one other example, which illustrates its dangers; it was in a boy who was thrown from a horse. He had a discharge from his nose, probably caught in a stable where there were some infected horses, and he quickly died with meningitis and phlegmonous suppuration of the forehead. The other cases did not present any special features of importance except those to be presently referred to; but it is interesting to observe that there were amongst them none of severe chest or abdominal injuries.

The following is a complete list of the injuries, in which are included those that were under the care of Mr. A. E. Barker and Mr. Bilton Pollard with their kind permission.

1.—Compound fracture of both bones of right leg about the middle. Fracture at junction of inner and middle thirds of left clavicle. Chest and nose bruised. The patient was sitting back to the engine in the last compartment but one of the last carriage but one, and was thrown out of the carriage door on to the platform on his back, his feet being still under the seat.

2.—Fracture of both bones of both legs about the middle, the left badly comminuted. Blood in left knee-joint and the joint loose. The patient was sitting back to the engine in the third or fourth compartment, but he forgets of which carriage. He put out his hands to try to save himself. His legs were fixed by the wreckage.

3.—Fracture of both bones of left leg about middle. Fracture of right internal malleolus. Bruise of forehead. The patient was sitting back to the engine in the third compartment, but he forgets of which carriage, the third from the door. He said that the seats met and nipped their legs. He was face downwards on the top of the other passengers. Only the right leg pained him.

4.—Simple fracture of both bones of both legs about the middle. The patient was sitting, back to the engine, in the right-hand corner of the first compartment of the last carriage. His legs were caught between the seats.

5.—Fracture of both bones of left leg about the middle. This patient was the brother of the last patient and was sitting next to him. He jumped up to get out. The right leg escaped, but the left was still between his brother's legs and was caught in a similar way.

6.—Simple fracture of the left fibula below the middle. Effusion into the left knee. Left ear almost torn off. The patient was sitting, back to the engine, in the left-hand corner of the third compartment from the guard's van of the last carriage. After the smash he was facing the engine, his head and body being fixed between a seat and the back part of the compartment. His legs were also fixed between the seats.

7.—Simple fracture of both bones of the left leg about the middle.

Bruising of the right leg. The patient was sitting back to the engine, in the right-hand corner of the first compartment of the last carriage but one. He was thrown to the opposite end of the compartment by the tilting-up of the carriage. He lost consciousness, and on recovering found his left leg free and his right pinned amongst the wreckage.

8.—Fracture of both bones of left leg. The patient was sitting back to the engine in the last carriage but one.

9.—Fracture of both bones of the left leg.

10.—Both ankles pinned in wreckage. Possibly a vertical fracture of lower third of left tibia.

11.—Smash of left foot, fracturing all the metatarsals. The patient was facing the engine in the third compartment of the last carriage. He thinks the injury was caused by some hard substance being driven up through the floor of the carriage.

12. Compound fracture of left thigh about the middle. The patient was sitting face to the engine in about the middle compartment of the last carriage. He jumped up and was thrown back violently on to his seat. His legs were fixed between the seats.

13. Fracture of left femur at junction of upper and middle thirds. This case is referred to below as A. B.

14.—Fracture of both femora about the middle, injury to both knees, smash of left heel, fracture of right orbit. This case is referred to below as C. D.

15.—Fracture of both femora and the left tibia. The patient developed symptoms of cerebral irritation and died on the seventh day. There was no post-mortem examination.

16.—Fracture of the left femur.

17.—Fracture of right acetabulum without displacement. A small piece broken off the lower end of the left tibia.

18.—Obturator dislocation of the right hip. The patient was in the sixth compartment of the last carriage and was sitting with the knees apart. He was thrown forward by the accident.

19.—A complete smash of the base of the skull. The patient only lived a short time.

Four of these patients died; one almost immediately and three others, Nos. 13, 14, 15, at different intervals after the accident with cerebral symptoms. On one of these no necropsy was allowed, but it seems not improbable that it was of the same nature as the two now to be described in detail. These presented unusual symptoms which the post-mortem examination proved to be associated with, if not due to, cerebral fat-embolism.

CASE 1.—A. B., a male, aged 25, was admitted with a fracture at the junction of the upper and middle thirds of the left femur. He was brought in about an hour after the accident; he had not at any time lost consciousness and there was no evidence of injury to the head. At 2 P.M. he was given chloroform and the limb was put up in a Liston's long splint with extension with short splints around the thigh; he was given morphia gr. ¼. At 8 P.M. he became unconscious and could not be roused; the pulse was 130 and the temperature (rectal) 103° F. The breathing was "Cheyne-Stokes" in character. He had an extensor plantar reflex on the right side, but there were no other signs in the nervous system suggesting any localised injury to the brain. No urine could be drawn off; lumbar puncture gave a clear fluid and there was no increase of pressure. There was some vomiting. The condition at this time was thought to be one of cerebral compression, but the low tension of the pulse and its rapidity appeared to negative this conclusion, and together with the absence of any localising signs or head injury led Mr. Pollard to decide against operative measures. At 12 midnight the periodic breathing had stopped, the respirations were shallow, and there was some cyanosis.

On Dec. 6th, at 11 A.M., lumbar puncture was again performed; the fluid again was clear with no increase of pressure. The pulse was very feeble and rapid. There was very little alteration in the patient's condition during the rest of the day, but perhaps the coma was less deep. Towards midnight the temperature reached 105° F., it having risen steadily during the day. The treatment had consisted in intravenous injections of saline (O ii.) containing adrenalin, while digalen (m 8) and liq. strych. (m 3) were given subcutaneously every four hours. On Dec. 7th the coma was less and the patient's colour had become better; there was considerable variation in the nervous physical signs, the extensor plantar reflex on the right side giving place to a flexor. The pulse improved in tension, but still remained very rapid. The temperature fell during the day to 101·3°. On the 8th the general condition seemed better during the day. The patient resented interference. The pulse became slower, 128, and its tension increased, and the temperature sank to 100°. On the 9th, in the early hours of the morning, the patient became very cyanosed, and he died at 8.55 A.M. The temperature before death was 99°. No further signs or symptoms of damage to the nervous system had in the meantime appeared. The urine was afterwards found to contain fat.

Post-mortem examination.—There was no evidence of injury to the skull. On opening the cranium there was no increase of intracranial tension, and after the removal of the dura no cerebro-spinal fluid could be seen, the veins on the surface of the brain were a little dilated, there was no œdema of the brain, or flattening of the convolutions. On incising the brain every cut surface showed thickly studded punctate hæmorrhages. There was slight broncho-pneumonia mainly affecting the lower lobes of both lungs. There was no obvious sign of disease in the heart, kidney, and other viscera. The left femur was fractured at the junction of the upper and middle thirds, the fracture being slightly oblique; the ends were not in apposition, and there was a large quantity of extravasated blood. There was no crushing of the bone, but on sawing the bone longitudinally the extravasated blood was seen to extend the whole length of the medullary cavity. No other injury could be discovered. Sections were made of the brain, lung, kidneys, and heart; they were stained with Sudan III. with the object of determining whether, and if so to what extent, fat-embolism had occurred, with the result that in the brain, besides the extravasation of blood around the vessels, which was well seen, some of the capillaries were found to contain fat. In the lungs and heart the vessels were filled with fat as if they had been injected for a demonstration of the blood-supply of the part. In the kidneys fat was also found but limited to the capillaries of the glomeruli. There was none in the vasa recta or in the tubules. If we had not been on the look out for fat-embolism there was nothing in the naked-eye appearance of the brain and other viscera which would have suggested its existence, and it would have been concluded that the capillary hæmorrhages in the brain were the only discernible lesions which could have accounted for death.

CASE 2.—C. D., a male, aged 30, was admitted on Dec. 5th at 10.30 A.M. He was suffering considerably from shock, even more than his obvious injuries seemed to account for. He was given a hypodermic injection of morphia (gr. ¼) before he was moved to the ward. There was a bruise on the right side of the head and the zygoma was fractured. Both femora were broken and there was fluid in both knees. There was also an extensive lacerated and contused wound of the left foot. He was given chloroform, the wound was cleaned up with carbolic and sublimate lotions, and the thighs were put up in Liston's long splints. On recovering from the anæsthetic he vomited and was still much shocked; he complained of constriction of the chest. The two long splints were no doubt irksome, but the bandage was not tight. At midnight he was very restless but quite conscious; the pulse was 160 and of low tension. The temperature was 102° F. On Dec. 6th at 3.30 A.M. the patient awoke, vomited, and then became unconscious. "Cheyne-Stokes" breathing developed, but there were no localising signs of cerebral injury. At 7 A.M. he was deeply comatose. The respirations were still periodic. The pulse was 160 and of low tension. Double extensor response was present. The temperature was 102°. Lumbar puncture withdrew some faintly blood-stained fluid under moderate pressure and the withdrawal of the fluid stopped the periodicity of the respirations. At 11 A.M. the condition was unaltered. The pulse was still of low tension and the pupils were unequal and small, but as there was evidence of injury to the right side of the skull it was decided to trephine over the right middle meningeal artery. This was done, but there was no increase of intracranial tension and no blood beneath the dura. The patient gradually sank after the operation and died at 2.30 P.M., the gradual progress of the symptoms having been in no way affected by the operation. The urine was afterwards found to contain fat.

Post-mortem examination.—Both femora were fractured transversely about the middle of the shaft. On opening the knee-joints they were found to contain liquid blood, and floating upon the top of the blood was a considerable quantity of liquid fat, the double streams of black blood and pale yellow opaque fat issuing from the incisions presenting a most unusual appearance. The anterior and outer part of the right tibial articular surface showed fissures, which did not, however, extend into the shaft. In the left knee-joint the posterior crucial ligament was ruptured and the anterior partly torn away from the tibia. The whole surface of the brain was redder than normal owing to the injection of the vessels; otherwise there was nothing to remark externally. On section there were a few punctate hæmorrhages. The hinder end of the cribriform plate was fractured with comminution. There was a vertical fracture

in the anterior part of the temporal fossa, whereby part of the malar bone, including the external angular process and the zygoma, were detached as a loose fragment. The lungs were somewhat hyperæmic and œdematous. There was no obvious lesion of the heart, kidneys, or other viscera. The brain and lungs were hardened in formalin, microscopical sections cut, and stained with Sudan III. They showed the capillaries to be blocked with fat; in the lung the smaller arterioles were also filled with fat.

This case differed from the first one in that the injuries were much more extensive, and that clinically the course of the illness was much more rapid, while the post-mortem examination did not show either multiple hæmorrhages in the brain or broncho-pneumonia in the lungs, both of which changes must be regarded as secondary.

It will be thus seen that both these cases presented very similar symptoms and signs, they both had fractures of the thigh, in one case a comparatively simple fracture and in the other two simple fractures, together with some crushing of the bones about the knee-joints and a lacerated and contused wound of the foot. They were both given chloroform for the setting of bones. Within about 12 hours they both developed a comatose state more or less suddenly, without any previous noticeable pulmonary distress, the temperature rose rapidly, the pulse was of low tension and rapid, and there were no localising signs in the nervous system pointing to a lesion in any particular part of the brain. Both might have been thought to be cases of cerebral compression if it had not been for the character of the pulse. One of them was trephined over the right side because he had evidence of injury to the skull on that side. The operation probably did not hasten his death, the only cause of which that could be demonstrated was fat-embolism of the brain. The other patient recovered to a slight extent from what appeared to be an almost hopeless condition, and his death was no doubt partly due to a secondary broncho-pneumonia; in this case also some of the typical signs of cerebral compression were absent.

There are three points of especial interest to be noted. 1. The difference in the extent of the original injury in the two cases. Whereas one might have expected fat-embolism to occur in the case where there were several fractures, some of which were of a crushing nature, there was nothing about the simple fracture in the other case to suggest the likelihood of its occurrence, or at all events of its causing any grave symptoms. 2. The absence of dyspnœa or other symptom of pulmonary embolism in one case and the fact that the other patient only complained that his bandages felt tight. 3. The resemblance superficially of the condition to that of cerebral compression, but only superficially, because the characteristic pulse of compression was never observed. There were never any signs in the nervous system pointing to a localised injury to the brain.

It will be interesting to note how far the two cases described above compare with other published examples of fatal cerebral fat-embolism.

Hämig[1] collected the published cases in 1900, taking only those in which no other cause of death could be found. He gives 12 and adds 5 of his own. The older clinical reports are valueless on account of the complications resulting from sepsis. All the cases had suffered fracture of one or more of the large long bones, and except for shock their general condition was good when first seen. After a latent period varying from six hours to nine days coma supervened, sometimes, but not usually, preceded by delirium. The temperature showed a rise coincident with the onset of the coma, and the rise continued until death. In two cases there were signs suggesting a local lesion of the brain, so that one of them was actually trephined over the middle meningeal; this was done in spite of the fact that the pulse had not a high tension. As in our case nothing was found. Fat was found in the urine in nearly all the cases. There was slight cyanosis in some of the cases, but in none was there any evidence of extensive involvement of the pulmonary circulation. The pulse was in all the cases rapid and of low tension. The post-mortem appearances were much the same, the brain showing numerous punctate hæmorrhages, the lungs an early broncho-pneumonia. The same extensive microscopical evidence of fat-embolism was also a feature.

[1] Beiträge zur Klinischen Chirurgie, 1900, Band xxvii., p. 333.

Oehler[2] published two cases, only one of which was fatal, so that this one alone can be taken as a definite case. It had fractures of the right femur and tibia; there was no rise of temperature and no fat was discovered in the urine, but the post-mortem findings were the same as in our cases. The other case certainly corresponded in its course to the general clinical picture, but no fat was found in the urine.

Other cases are reported as a result of forcible manipulation of ankylosed joints. The importance of a recognition of the condition cannot be over-estimated, more especially in view of the difficulty of diagnosis from intracranial hæmorrhage. It is well known that hæmorrhage may occur some time after the original injury, a latent period similar to that seen in these cases being no uncommon occurrence.

As points in the differential diagnosis we would lay stress on (1) the absence of the high blood pressure seen in cerebral compression; (2) the absence of isolated paralyses; and (3) the absence of fulness of the retinal veins.

In thinking over these cases one cannot but be struck with the fact that out of a large number of severe accidents only three had symptoms and signs that could be attributed to fat-embolism, and however striking may be the coincidence of the symptoms and the post-mortem appearances it is impossible to forget that Cohnheim and others have thrown doubt upon the whole matter, because it has been shown that large quantities of fat can be injected into animals causing extensive embolism without in some cases producing even serious symptoms.

SOME OCULAR AND VISUAL CONDITIONS IN MEDICAL CASES.[1]

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IN order to make what I have to say of as much practical use as possible, I am basing my remarks upon observations which I have made, for the most part, on cases referred to me at Moorfields by the surgeons to that hospital during the last five years. I propose to divide my remarks into five sections, first of all considering conditions of the pupil; secondly, conditions of ophthalmoplegia externa; thirdly, changes in the optic nerve; fourthly, retinal changes; and fifthly, hemianopia.

First, with regard to pupil conditions. Inequality of the pupil is by no means uncommon, and is not necessarily, in my opinion, associated with serious morbid conditions. The late Marcus Gunn, however, was strongly of opinion that a constant inequality of pupils in an adult usually meant some neurotic predisposition. When it is met with in children some conditions affecting the cervical sympathetic should be looked for. And it is not infrequent to find such inequality of pupil, not only in children, but also in older patients who have suffered from cervical glandular enlargement or suppuration in early life. Another condition of pupil which is of great importance, and undoubtedly of great significance, is that condition in which it is inactive to light, while still reacting during accommodation—the Argyll Robertson pupil. This was described, as you all know, in the first place in connexion with tabes dorsalis. But further observation has shown that it exists in many other conditions, more especially in patients who have been the subjects of syphilis, and not infrequently in association with general paralysis of the insane. Irregularity in the shape of the pupil is frequently associated with this inaction to light. Dr. Farquhar Buzzard has recently alluded to its occurrence in connexion with lesions in the neighbourhood of the third ventricle, but of this I have myself no personal experience. The question has been asked, Do we ever find the Argyll Robertson pupil unassociated with any other condition? I have notes of several cases in which it persisted for several years under observation without any associated symptom or sign of nervous disease developing. One such patient I saw 16 years ago on account of neurasthenic symptoms. At that time I examined him carefully, but could find no sign of any organic disease except the

[2] Ibid., 1909, Band lxv., p. 11.

[1] A paper read before the Medical Society of London on Jan. 9th, 1911

existence of slightly unequal pupils, which were inactive to light. I suspected it might be early general paralysis. That man I have recently seen, and he has still unequal Argyll Robertson pupils, as well marked as they were 16 years ago. And yet there has developed no other sign of disease except that he has become deaf in both ears, apparently the result of early syphilis also. In some cases the Argyll Robertson pupil is present on one side only. Of this I have seen a good many examples; and, curiously enough, in two of the cases on the side on which the Argyll Robertson pupil was present the knee-jerk was absent; while on the other side, the side on which the pupil acted to light, the knee-jerk was present. This, of course, was probably only a coincidence.

In some cases in which the Argyll Robertson pupil is present, optic atrophy may also coexist, and in some such cases the knee-jerks are absent; in others the knee-jerks are active. The former, of course, naturally fall into the class of tabetic optic atrophy. In the latter, I think, there is always a presumption and a fear lest general paralysis of the insane may develop. In some other cases with Argyll Robertson pupil, paralysis—hemiplegia or paraplegia—has been present; and I have also seen it in a case with wasting about the shoulders—the result of syphilitic pachymeningitis. So that, to recapitulate, we may find the Argyll Robertson pupil present without any other morbid sign; we may find it present on one side without any sign of other disease of the nervous system; we may find it present on one side with signs indicating involvement of other parts of the nervous system, such, for example, as the absence of one or both knee-jerks. We may find it also present with very definite signs of tabes, or with very definite signs of general paralysis of the insane. It may also be present associated with marked atrophy about the shoulder girdle. It may be present with a condition of paraplegia, also syphilitic in origin; and I have known it present in a case in which there was a history of repeated hemiplegic attacks, those, no doubt, being the result of syphilitic thrombosis.

I now pass on to the second condition—namely, ophthalmoplegia externa. The conditions determining this are varied. One occasionally meets with paralysis of one external rectus muscle, and the question arises whether such paralysis may be the result of neuritis from cold affecting one sixth nerve. In such a case the paralysis would be analogous to the ordinary form of facial or Bell's paralysis, but I am bound to say that in most of the cases in which cold is supposed to be the exciting cause, a careful investigation fails to reveal sufficient justification for this explanation. It is also curious to think that if paralysis of one external rectus may be the result of cold, it does not happen to occur in association with a similar paralysis of the seventh nerve. And I may mention that in all the cases of facial paralysis of peripheral origin that I have seen—and they must now run into hundreds—I have never observed an associated weakness in the sixth nerve. The sixth nerve undoubtedly not infrequently suffers as the result of an accident. If one remembers the long course of the nerve and the delicacy of its filament, it is not surprising that in cases of concussion or fracture such an accident may cause paralysis of one sixth nerve. Third nerve paralysis is probably one of the commonest that we meet with. And in the great majority of cases it is, I believe, syphilitic in origin. The lesion, I think, is gumma occurring in the sheath of the nerve and pressing upon the filaments; and frequently complete recovery results from the effect of antisyphilitic treatment. In some cases, however, recovery does not take place. I have known two cases of third nerve paralysis occurring in patients whom I knew before as being the subjects of Argyll Robertson pupil. In both instances the third nerve paralysis cleared up completely, but the patient in each case died within a very few years from general paralysis of the insane. I need only refer to many of the conditions with which ophthalmoplegia externa is associated, such as tubercular meningitis, post-diphtheritic paralysis, and intracranial disease. In intracranial tumour the nerves supplying the eye muscles may suffer from direct involvement in the tumour. They may, however, suffer indirectly even in cases in which the growth is far removed from them—e.g., in the cerebellum—either from pressure against the bone, or, as Harvey Cushing has recently suggested, from pressure on them by branches of the basilar artery. In tabes, also, besides the paralysis of the third nerve, which may clear off under antisyphilitic treatment, there may also be permanent paralysis of ocular muscles, probably the result of degeneration of the nuclear cells. There is a form of hemicrania with which third nerve paralysis is associated, the so-called *migraine ophthalmoplégique*. This probably depends upon a lesion occurring in the course of the third nerve itself; and the condition is characterised by recurrences of paralysis of the third nerve with recurrent headaches, the paralysis clearing up less and less completely after each attack, and finally settling down into complete paralysis of all the branches of the nerve.

One disease with which ophthalmoplegia externa is associated is of great importance because of the danger there is of mistaking it for a hysterical condition. I mean the condition of myasthenia; and I might mention a case of this class which was referred to me not very long ago at Moorfields by Mr. Holmes Spicer as one which is very instructive, in the suddenness of the onset, in the rapidity of the course, and in the conditions which were found post mortem. The patient was a young married woman who suddenly found that after she had gone a little way from home one day she became so tired that she was scarcely able to drag one leg after the other. She was able to return home only with considerable difficulty. But the weakness persisted, although at times in the morning when she got out of bed she was able to move about for a time quite actively. This weakness of the legs was associated with a gradual heaviness and drooping of the eyelids, and when she came into hospital she had double ptosis, almost complete paralysis of all the ocular movements, variable, however, in its degree, and attacks of very great weakness, with difficulty in breathing. She finally died, after only about six months of illness, and at the post-mortem examination there was found present a very large thymus, which was completely covering the heart. The nervous system was quite normal. I am publishing details of this case in another place, but I mention it merely as being so characteristic of the sudden manner in which the disease may arise, the rapid course which it runs, the absence of changes in the nervous system, and the morbid condition of the thymus which is found in, at least, some cases.

Thirdly, I should now like to refer to conditions of the optic nerve that are found in cases which have other medical signs and symptoms. Atrophy of the optic nerve is found especially in tabetic cases. It is said to occur in the preataxic stage of tabes. But I should venture to demur to this statement, because I am quite sure that many of the cases of tabes with optic atrophy never become ataxic at all. Sometimes the optic atrophy of tabes is associated with Argyll Robertson pupil; sometimes that condition of pupil is not present. Perhaps it is hardly correct to say that in some of these cases of tabetic optic atrophy the knee-jerk is present, because then it may be said, "Well, after all, perhaps these cases are not tabes." And that is quite true, but many of those cases, I believe, are tabes, for I have frequently known the knee jerk disappear under observation. Many of them are general paralysis of the insane, and perhaps it is the more correct way to regard those cases as really cases of one and the same disease—a parasyphilitic disease affecting in one case chiefly the spinal cord and the optic nerve, and in the other case affecting the higher centres and giving rise to mental changes and also involving the optic nerve. In disseminated sclerosis there is a form of atrophy met with, but this, in my experience at all events, contrary to the tabetic atrophy, never leads to blindness. I have never known a patient with disseminated sclerosis become permanently blind, whereas in tabes when optic atrophy once sets in it is the rule, almost without exception, for the patients rapidly to lose sight altogether. In disseminated sclerosis also it is not infrequent to have a central scotoma for colours present, and in that sense the atrophy resembles very closely that met with in the family form of optic atrophy, and also the pallor of the optic nerve which is present in so many cases of toxic amblyopia. I refer later to optic neuritis occurring in disseminated sclerosis.

One condition of optic atrophy deserves to be mentioned—that which occurs with tumours pressing on the optic chiasma. Of course, there is associated with it bitemporal hemianopia, but the interesting point is that the condition developed as a result of pressure there is not one of optic neuritis so-called, but one of a simple atrophy. I have only seen one case in

which definite symptoms of tumour at the chiasma were present, in which there was optic neuritis.

With reference to optic neuritis there is no doubt that tumour of the brain is by far the most efficient cause of this. I was rather surprised to see in a recent paper by Sir Victor Horsley the following statement: "I am, of course, aware of instances in which the occurrence of optic neuritis was said to have been the first symptom calling for notice, but I have not myself seen such chronology in a case of intracranial tumour, and would rather suggest that the neurological symptoms had not been observed." Perhaps the statement is natural from the fact that patients would hardly be likely to seek the advice of a surgeon or a physician on account of visual defect from optic neuritis, but that it is a statement requiring considerable qualification will, I think, be sufficiently evident if I mention that I have looked through the notes of the cases referred to me at Moorfields during four years, and in those four years I have come across no less than 20 cases of patients who had gone to Moorfields as the first hospital they had been to on account of eye symptoms, and in all those cases optic neuritis of some intensity was present. Some of them then had, or developed subsequently, other signs of intracranial growth. In a few cases of disseminated sclerosis I have known optic neuritis to be present. The lesion of the optic nerve in this disease is, I believe, as a rule, retro-bulbar neuritis, as Dr. Thomas Buzzard long ago pointed out, but one can easily imagine such a patch of inflammation occurring quite near to the disc and actually encroaching upon it, and so giving rise to this appearance. I think that certain toxic conditions also may give rise to optic neuritis. It has been described, of course, in association with anæmia, and it has also been described as a sequel to influenza. Personally, I have only seen one case of post-influenzal neuritis, or at all events of neuritis occurring after an acute illness of the influenza type, and in that case the neuritis certainly cleared up without any further symptom developing.

The fourth condition to which I should like to refer is that of neuro-retinitis. That may occur, of course, in association with albuminuria, also with glycosuria; and the appearances are sufficiently distinct and characteristic to require no description. One condition which I do not think is quite so common or quite so well recognised, except by ophthalmic surgeons, is the condition of retinal thrombosis. A patient comes complaining of sudden loss of vision or sudden impairment of vision in one eye. It is not often that the condition affects both eyes, at all events simultaneously. On examination of the eye the condition which is found is one of, apparently, blocking of a vein, sometimes of an artery, many hæmorrhages, and a good deal of effusion round, and a general blurring of, the retina. Sometimes the condition clears up very rapidly, so that the patient's vision in a few weeks' time is almost as good as it was before. In other cases the clearing up is extremely slow and never becomes anything like perfect. I have been interested in observing the associated conditions of the circulation, and I have been very much struck with the fact that in many such cases there is no sign of any other disease, no albuminuria, and no cardiac hypertrophy. In some cases, however, cardiac hypertrophy is present, but it is certainly exceptional. And I suppose that one must assume that in such cases in which there is no associated visceral disease the condition really depends upon local arterio-sclerosis, for some of the patients in whom I have known the condition occur are now alive after as many as six or seven years.

Embolism of the central artery of the retina is also a condition to recognise. Of course, it is usually associated with cardiac disease, and the characteristic appearances are too well known to need description. I have seen it, however, in one case in which other observers as well as myself could find no morbid heart condition. But it occurred immediately after diphtheria, and is, I presume, the result of detachment of some little patch of fibrin from a heart valve, although the heart valve showed no incompetence. It is interesting to note that I have seen four cases of hemiplegia occurring in children after diphtheria without cardiac disease, and in all of those the mechanism probably was similar.

I would now refer briefly to the fifth section—the condition of hemianopia, and it ought to be recognised that homonymous hemianopia may occur quite independently of any other paralysis. I have known it now in several instances, and the cases in which it has occurred have been mostly syphilitic. I have known it, however, as a result of embolism, although in most of these cases there is a history of a transient weakness of the corresponding side of the body. But when the patients come under observation the condition is one of simple uncomplicated homonymous hemianopia. We must assume in such cases that there has been a lesion, probably embolic or thrombotic, in the neighbourhood of the posterior part of the internal capsule, in such a position as to interfere permanently with the function of the optic tracts, while allowing the other sensory fibres and the motor fibres to escape completely. Bitemporal hemianopia, of course, is found only in cases in which a lesion is present at the chiasma, and it may be associated with signs indicating the presence of acromegaly.

I am aware of the extremely discursive character of these remarks, yet I trust that they may arouse some interest, or at least impress some of those who have done me the honour to listen to them, with the importance and significance of eye signs and symptoms and the suggestions which they imply of associated morbid conditions.

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DIRECT BRONCHOSCOPY.

TWO CASES INDICATING THE VALUE OF THIS METHOD FOR THE DETECTION AND REMOVAL OF FOREIGN BODIES IMPACTED IN THE LOWER AIR-PASSAGES.

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THAT the entry of a foreign body, be it large or small, soft or hard, into the lower air-passages is an accident of the gravest nature is a statement the truth of which our profession has always recognised. For not only has the surgeon been cognisant of the evil, and probably fatal, results which sooner or later would result from the impaction of a foreign body in one of the deeper main airways, but until quite recent times he has been only too well aware that any attempts made to remove such obstructions were often of the nature of blind gropings in the dark, and that his intervention might hasten, rather than retard, the evil consequences of the accident.

How very different is the outlook to-day, when, thanks to the genius of Killian and the inventive mind of his assistant Brüning, practical instruments have been constructed whereby we are enabled to pass a straight, illuminated tube by way of the mouth, larynx, and trachea to the very roots of the lungs, and by direct vision inspect every inch of the way. Surely in the bronchoscope we have reached one of the highest ideals of "bloodless surgery," for by means of its cunningly devised arrangements we can not only see and remove any intruding foreign bodies which may have found their way to these hitherto hidden depths, but in other instances we may perchance ascertain the nature and situation of pathological conditions endangering the life or well-being of the patient. The following two cases will illustrate my contention and should go a long way in proving that the bronchoscope is no longer a surgical toy, but that it is an instrument of the greatest practical value and one with which surgeons should make themselves familiar.

CASE 1. *Removal of a portion of rabbit bone which had been impacted in the right bronchus for more than three years and had produced symptoms of bronchiectasis.*—The patient, a male, aged 46 years, was admitted into University College Hospital, under the care of Dr. J. Rose Bradford, on Jan. 9th, 1911, complaining of "feeling ill and coughing up blood." Three years previously the patient had "swallowed a rabbit bone, which seemed to stop at the bottom of the throat and to cause a tickling feeling between the shoulder blades." He then began to suffer from a cough which had lasted ever since. Fourteen days after swallowing the bone he was removed to an infirmary, where he was treated for "pain in the back, chest, and stomach." Eighteen months ago he had coughed up some streaks of blood for the first time. There was shortness of breath on exertion, he complained of a dry throat, and he had wasted very considerably during the past six months.

On admission to hospital the patient was found to be a

delicate-looking man, with rapid breathing and a troublesome cough, accompanied by offensive expectoration tinged with blood. There was marked clubbing of the fingers and toes. The pulse was 80, the temperature was 100·5° F., and the respirations were 36. The chief physical signs in the chest were as follows:—Left lung: Some diminution of respiratory movement at the base, where the breath sounds were also weak. There were percussion dulness, diminished breath sounds and vocal resonance over the lower portion of the scapula. The percussion note was impaired over the front of the apex to the level of the third rib. Right lung: Vocal resonance and expiration were increased over the apex in front; the breath sounds were absent over the base of the lung posteriorly; crepitations were audible in the axillary region, with some increase of vocal resonance; and the breath sounds were diminished over the base anteriorly. No tubercle bacilli were found in the expectoration, but staphylococci and streptococci. Skiagraphy did not reveal the presence of any foreign body in either lung. The urine was acid, with a specific gravity of 1020. No albumin or casts were present.

Mr. R. J. Godlee saw the patient in consultation with Dr. Rose Bradford, but in view of the presence of physical signs in each lung he thought an external operation inadvisable, and they kindly suggested that I should examine the lower air-passages with the bronchoscope. On Feb. 15th morphia, gr. 1·6, and atropine, gr. 1·200, were injected subcutaneously half an hour previously to the administration of chloroform by Mr. A. Beresford Kingsford. General anæsthesia having been induced the patient was turned into the left lateral position and the bronchoscope tube was passed through the glottis to the bifurcation of the trachea. The contrast between the pale mucous membrane of the left bronchus and the deep red, congested lining of the right was very striking. In order to check reflex coughing and fearing that the contact of any instrument with the engorged mucosa of the right bronchus would cause bleeding, I applied a solution of equal parts of cocaine (20 per cent.) and adrenalin (1 in 1000) to this region, and after the lapse of about three minutes passed an extension tube into the bronchus, when I thought I detected the foreign body at its far end. It was the work of a moment to set all doubts at rest by feeling the "grating" of a hard substance on a long probe passed through the bronchoscope. An endeavour was now made to seize the bone with the long fine forceps used in bronchoscopic work, but considerable difficulty was experienced owing to the free oozing of blood and secretion around the foreign body. By the application in rapid succession of small gauze mops the trouble was eventually overcome and the bone was seized and slowly withdrawn from the bronchus with the bronchoscope. Immediately the foreign body was loosened a gush of pale, straw-coloured, and very foul liquid poured from the proximal end of the bronchoscope. During the simultaneous removal of the bone, forceps, and bronchoscope through the glottis the former slipped from the grasp of the forceps, and a further search discovered it in the left bronchus, from which it was quickly and easily removed. It was found to measure eleven-twelfths of an inch in length, half an inch in breadth, and a quarter of an inch in thickness. It was infiltrated with pus and its stench was beyond description. The patient remained for a fortnight in the hospital and was then sent to a convalescent home, where he stayed for three weeks. I saw and examined him on March 27th—i.e., nearly six weeks after the removal of the obstruction—and found that he had put on 11 lb. in weight, that the expectoration was very slight, about "half a dozen times in the day," and that it was "yellowish but not foul." The breath-sounds were still weak below the angle of the right scapula but no crepitations were audible, and the expansion of the right base was practically equal to that of the left. There were no abnormal physical signs in the left lung.

The case presents many interesting features. First of all, there is the length of time (more than three years) the foreign body had been impacted with the usual results—profuse suppuration and bronchiectasis of that portion of the lung supplied by the obstructed tube. The "clubbing" of the fingers and toes and the rapid undermining of the patient's general health have already been referred to.

In this patient, as in the case which follows, skiagraphy gave us no assistance in the detection or location of the foreign body, although in each instance one might have expected that, being impervious to the X rays, the pieces of bone would have been visible on the screen or on the negative. Possibly this was due to inflammatory thickening in the neighbourhood of the hilus, or, more probably, to the fact that an instantaneous radiogram was not taken which would not have been affected by cardiac and respiratory movements. In any case, it teaches us that if the history of the case and the physical signs suggest the presence of a foreign body we must not give undue weight to the negative evidence of a radiogram.

The existence of definite physical signs in each lung introduced a disturbing element into the diagnosis. Since they have quite disappeared from the left lung during convalescence it is possible that they were caused by mild inflammatory lesions induced by the inhalation of septic material from the right lung.

I do not think the contrast in colour between the right and left bronchus in any way peculiar to, or caused by, the foreign body, because we have since noted a precisely similar congestion of the affected bronchus in a patient of Dr. Sidney Martin. In this instance there was no history of the swallowing or inhalation of any foreign body, but it was thought better to remove any doubt in the matter by a direct inspection with the bronchoscope.

During the search for the bone I ascertained that the respiratory movement of the larger bronchial tubes is more easily felt than seen, for, mistaking the greyish partition between the adjacent openings of two secondary bronchi for the foreign body, I seized it in forceps, but only to discover that the instrument was drawn downwards and forced upwards with a piston-like movement with each inspiration and expiration respectively.

To those who are interested in the "movements of the bronchi" I cannot do better than advise them to read Mr. Godlee's interesting lecture referred to below (Case 2).

CASE 2. *Portion of mutton bone removed from the right bronchus, wherein it had been impacted for 10 days.*—For the opportunity of seeing and operating upon this case I am indebted to Mr. Godlee, who described it in his lecture on "Foreign Bodies in the Air-passages," published in THE LANCET of June 18th, 1910. I cannot do better than insert his own description:—

> It was that of a young lady who, whilst eating some mutton broth, swallowed a piece of bone the wrong way. She was foolish enough to ask the advice of a chemist, and he had the hardihood to try to push it down with the handle of a tooth-brush. A spasmodic cough quickly set in, and lasted for two hours. The medical man who was called in could naturally see nothing; she went on coughing more or less continuously for four days, and after ten days came to London with a temperature of 100° F. A very indefinite result was obtained by an X ray photograph, and when I saw her, four days afterwards, the temperature was 101° in the morning and 102·5° in the evening. There were a little deficiency of movement in the right lower lobe and a slight deficiency of the entry of air into this part of the lung. A very few crepitations were also to be heard. The cough for the moment was in abeyance, but I was told that several attacks had occurred in the course of the day. The physical signs were so slight that if one had not been aware that such is often the case in the early stages of this condition, one might have been excused for counselling delay; but I strongly urged that Mr. Tilley should be asked to see the patient next morning, and in this case the piece of bone was readily demonstrated to us at the lower end of the right bronchus, and was removed in the course of a few minutes with forceps. Already after ten days' residence in the bronchus it was soaked with pus and horribly offensive. The patient has made a complete recovery.

The portion of bone measured seven-twelfths of an inch in length, one-third of an inch in breadth, and one-sixth of an inch in thickness.

At this time of day it should not be necessary to give a description of the bronchoscope, as it has been so frequently demonstrated at various medical societies and figured in medical journals, and it takes a prominent place in the illustrated catalogues of surgical instrument makers. Should any readers wish to freshen their memory on the subject, I would refer them to my article on "Direct Examination of the Larynx, Trachea, and Œsophagus by Brüning's Instrument," in THE LANCET of Nov. 7th, 1908. Following upon a description with illustrations of the bronchoscope, I there recorded a case where a glass-headed pin 2¼ inches long was removed from the left bronchus, wherein it had been impacted for six weeks.

Space will not permit me to go into details concerning the choice of anæsthetics, local or general, or their combination, nor the best position in which to place the patient. Briefly stated, my experience has led me to prefer chloroform, with or without a preliminary injection of morphia and atropine. The latter may prove especially useful when a free secretion

of mucus or muco-pus is to be expected. If a general anæsthetic has been administered, I much prefer the patient in the lateral position—left or right according to circumstances—with the head slightly flexed towards the chest. By this means the larynx or upper end of the œsophagus is brought very much nearer to the operator than when the head is stretched backwards in the dorsal position, and I have a feeling that from the point of view of the anæsthetic it is a safer position for the patient.

The surgeon will find it wiser to wear plain glasses or his ordinary spectacles when making the examination, because, even when the patient is under fairly deep anæsthesia, a sudden cough may send a spray of very septic matter into his eye or paralyse his accommodation if cocaine has been freely used to anæsthetise the bronchus. Such a precaution will also protect his eyes from the "stinging" of the exhaled chloroform vapour, which may become a very real grievance during prolonged anæsthesia.

Finally, while it would be idle affectation to suggest that neither skill nor practice is necessary for the intelligent use of the bronchoscope in dealing with a very serious and not uncommon accident—viz., the inhalation or swallowing of a foreign body—yet it is very true that a little practice, combined with patience and gentleness, should render any surgeon competent to use the bronchoscope with reasonable assurance.

THE VALUE OF IONISATION IN INFLAMMATORY DISEASES OF THE LOWER BOWEL.

BY J. CURTIS WEBB, M.A., M.B., B.C. CANTAB.

IT is not proposed to enter into any preamble as to the etiology, pathology, or symptoms of the various forms of inflammatory affections of the colon and rectum, and it would also appear to be out of place to attempt a review of the various treatments, dietetic, medicinal—whether by the mouth or per rectum—climatic, or balneological, that are individually or collectively advocated in these conditions. It is only designed to draw the more serious attention of the medical profession to a method of treatment as yet, I believe, not generally known and seldom used, which, when employed in conjunction with a suitable diet and careful regulation of the bowels, has yielded in my hands and in the hands of others who have employed it such gratifying results that it is felt that its adoption in the type of case referred to should be more general.

In THE LANCET of Nov. 4th, 1905, was published a letter of mine on the treatment about to be described, which was based on a paper published by Dr. Sydney M. Whitaker in the *Archives of the Roentgen Ray*, 1904–05, p. 171. At that time I only quoted one case, but since then such good results have been secured that some further remarks on the subject appear to be warranted.

The treatment is based on the principle of ionisation, whereby the passage of a constant current propels the basic ions of any salt in solution from the positive towards the negative pole. If, therefore, the rectum and colon be filled with a solution of the required salts, and connected to the positive pole of a source of constant current, the negative pole being on the abdomen and back, and a current be passed, there will be a passage of the metallic base of the salt into or through the diseased mucous membrane towards the negative pole.

Owing to the intolerance of the rectum to holding large quantities of fluid for a sufficient time to enable the cells of the mucous membrane to take up enough of the medicaments to be of any therapeutic value, the treatment of colitis by simple injections has usually been but of the nature of a pure lavage or washing, that is to say, to remove from the diseased bowel surface any fæcal material adhering thereto by an antiseptic or stimulating solution.

The fact has long been recognised that solutions of salts of zinc applied to epithelium-covered surfaces have a particular healing effect in inflammations of these surfaces, and this fact is made use of in the treatment of the above diseases in the following manner.

The bowel is first thoroughly washed out in the morning with a copious plain warm water enema, repeated if necessary. It is important to cleanse as far as possible the surface of mucous membrane, and thus give the ions about to be introduced every opportunity of penetrating uniformly. If, however, as is sometimes the case, this procedure either exhausts the patient or causes pain and consequent irritability of the bowel, it must be dispensed with, and all that can be done is to ensure a free evacuation shortly prior to treatment.

The actual technique of the treatment is as follows. The abdomen is first well soaped and the lather left on. On to the skin are now applied four layers of Gamgee tissue (8 in. × 6 in.) well soaked in a solution of sodium bicarbonate (about a tablespoonful to half a wash-hand basin of warm water). The Gamgee should be laid on very smoothly, layer upon layer, so as to avoid any wrinkles, and on the last layer is placed a sheet of tin or lead (7 in. × 5 in.) connected by a cord to the *negative* pole of the source of current. Soaping the abdomen, using bicarbonate instead of chloride of sodium (the carbonic acid ion being less irritating than the chlorine ion), and the avoidance of wrinkles in the Gamgee, all help in avoiding those troublesome little ulcers which sometimes occur. If there be any acne or other spots on the skin each should be covered with a small piece of sheet rubber, or they may be thickly painted over with rubber solution or collodion. When all is in place cover with a large piece of thin mackintosh sheeting—to avoid wetting the bed or patient's clothes—and then turn the patient on the left side and apply an exactly similar arrangement to the lumbar region. A towel applied as a binder will keep all in place. Both abdominal and dorsal electrodes are to be attached to the *negative* pole, and a useful contrivance to simplify this can be made by any ironmonger by soldering three ordinary screw terminals into a stout strip of copper; the two conducting wires from the electrodes can be attached to two of the terminals, while a few inches of copper wire will join the third to the pole of the source of current. The rectal electrode may be of several varieties, but, in the writer's opinion, the best, supplied by the Sanitas Electrical Company, 6, New Cavendish-street, London, consists of a spiral of wire attached to a short metallic tube which carries a terminal for the positive wire, and which can also be fixed to the tube from a douche can. Over the wire spiral, which is 12 in. long, is fitted a stout indiarubber tube closed at one end but with a lateral opening near the point. With the abdominal and dorsal electrodes in position the patient is now placed on the left side with a pillow under the buttocks and the shoulders low, and the rectal electrode is passed as far as possible—using soap or any non-greasy lubricant. This electrode is attached to a two-pint douche can, previously filled with a warm solution of sulphate of zinc, 2 per cent., which is hung a little above the level of the patient. About half a pint of the solution should be slowly run into the bowel and then the current *gradually* turned on till the milliampère-meter registers 15 to 20 milliampères. The flow of the solution which continues all the time of the treatment should be so regulated that there is the minimum discomfort produced, and if the whole two pints can be retained it is an advantage. The current should be allowed to flow for from 10 to 15 minutes and then *gradually* turned off, the various electrodes disconnected, and the patient permitted to get out of bed to empty the bowel. After the treatment an hour's rest should be enjoined. This procedure should be repeated once every three to seven days, according to the severity of the case and the tolerance of the patient.

It was previously recommended that $AgNO_3$ solution should be employed of a strength of 1/10 per cent., but it has been found more convenient to use the $ZnSO_4$ solution instead, and the results are quite as satisfactory.

I have personally treated 14 cases of colitis by the above method, out of which number there has been but one failure. In this case the patient spends about seven months of each year in Egypt, where good milk and proper diet are hard to be obtained, and this fact has probably had some bearing on the unsatisfactory result. It is not claimed that all the remaining 13 cases were complete and permanent cures, but though this most gratifying result is known to have been secured in 6, of the other 7 5 are so much benefited as to only have the occasional passage of mucus without pain and to have greatly improved in general condition. Two have been lost sight of, but when the treatment terminated their

symptoms had disappeared and they expressed themselves as greatly benefited.

In 1910 I brought this treatment before the notice of a colleague in South Kensington, who since March of last year has had the opportunity of employing it in five cases. Dr. ——'s notes are appended to show the results obtained from this treatment in the hands of one who lays no claim to any special electro-therapeutic experience.

CASE 1.—A, aged 34, female, suffering from general debility and neurasthenia. Has suffered from bowel disturbance for years, passing large quantities of mucus and casts; had great pain after taking aperient medicine or using an enema. Had been operated upon for piles and fissure two or three times. Was examined by Mr. F. F. Burghard with the sigmoidoscope in March, 1910. The bowel was seen to be covered with dry patches of mucus, between which ulcerated and bleeding mucous membrane was to be seen; this condition extended from the sphincter as far as the sigmoidoscope reached.

In all, 15 treatments were given between March and July. All the mucus disappeared from the stools and the patient said her colitis was cured. She was examined with the sigmoidoscope in December, and the colon was found to be quite normal.

CASE 2.—B, female. Complained of flatulent distension and passing large volumes of flatus to such an extent that she could not go into society. Her bowels were also irregular and there was a copious amount of mucus in the stools. She had had many treatments, including Plombières douches. The fæces were examined by Dr. P. J. Cammidge, who reported that the patient was suffering from mucous colitis.

In February, 1910, she was examined under an anæsthetic by Mr. Burghard. The sigmoidoscope showed that the bowel was dry, cracked, and bleeding, with patches of dry mucus adhering to it. This patient had eight treatments, and was examined again in May, when the mucous membrane of the bowel was found to be quite normal. She has continued well up to December, 1910.

CASE 3.—C, female, aged 54. Patient had suffered from piles, prolapse, and copious mucous stools for many years. She was the subject of slight spina bifida, so the nervous sensibility of these parts was much diminished and she did not suffer much pain. For nearly two years she had been suffering from chronic diarrhœa with copious mucus and casts of the bowel. The piles, which were very extensive, were removed and gave no further trouble, but the signs of colitis continued. The patient had lost about 4 st. in weight. She was also examined by Mr. Burghard, and the sigmoidoscope revealed extensive colitis.

Treatment was commenced in March and nine applications were made. The mucus entirely ceased before the end of the treatments and the diarrhœa gradually got well, and up to January, 1911, there has been no return of the mucus, although the patient has been seriously ill with pleural effusion and jaundice.

CASE 4.—D, female, had suffered for many years from piles, fissure, fistula, and other rectal troubles, always had mucus in the stools, sometimes large casts. Had not known for years what it was to be free from pain or without discomfort in these regions. This patient was examined for him by Mr. F. Swinford Edwards in May, 1910. The sigmoidoscope showed extensive colitis as far as the instrument would go, also a small rectal polypus and some piles; these were removed, and the patient had *five* treatments with the ionisation. Up to December the patient had no return of trouble.

CASE 5.—E, female, aged 30. Very thin and emaciated; had been an invalid for some years, suffering from mucous colitis, passing large quantities of mucus and casts of the bowel. Seen in September, 1910, and had five treatments in three weeks. All the mucus disappeared and the patient then went abroad. In December she reported that the colitis was quite well and her general health greatly improved.

Other cases have been treated with immediate good results, but they are too recent to speak with confidence about yet.

On May 12th, 1908, before the Surgical Section of the Royal Society of Medicine, Mr. F. C. Wallis and Dr. W. Ironside Bruce read a paper on the Treatment of Ulcerative Proctitis by Zinc Kataphoresis, in which it was stated that it was my original communication to THE LANCET already referred to that drew the attention of the above authors to the possibilities of ionisation in proctitis. The cases they then reported show the extremely satisfactory results obtained by this method of treatment, results that have been confirmed by myself in the only two cases of this condition that have come into my hands.

Finding, however, that the introduction of a lint-covered electrode was too painful to be performed except under an anæsthetic the following simple contrivance was devised and has been used with the most happy results. Lengths of sausage skin were obtained each about a foot long and tested for freedom from holes by tying one end over a tap, turning on the water gently, and closing the other end. Such as were perfect were soaked for a week in a solution of HgI_2 in alcohol 1 in 500. By tying the end of one of these lengths and invaginating it a smooth membranous bag is formed which can be tied over the rectal electrode above described. If the bag be now filled with fluid some will be seen constantly to filter through. The bag should be lubricated with a non-oily lubricant and inserted into the rectum *empty* and filled with the $ZnSO_4$ solution when *in situ*. This very filling distends the bag so as to bring it into intimate contact with every part of the ulcerated mucous membrane, and the oozing through of the fluid keeps the part bathed with the solution of the salt that it is desired to ionise, while at the same time any tenesmus that may be set up is unable to expel the fluid. The absence of pain to the patient by this method permits of a more frequent application of the treatment than when the wool-covered sound is used.

Bina-gardens, S.W.

ASCITES TREATED BY LYMPHANGIOPLASTY.

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AND
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As the operation of lymphangioplasty is still in its infancy all cases treated by the method should be reported whether successful or not. This applies especially to cases of ascites, as here the various forms of the Talma-Morison operation are rivals in the field of treatment, and it is only time and experience that can decide which is the better method of treatment, or if these two different types of operation will be finally found to be indicated each in a different class of case.

The following are the notes of a case in which the introduction of artificial silk lymphatics, according to the method suggested by Sampson Handley in his Hunterian lectures for 1910, has been followed by disappearance of the ascitic fluid.

The patient, a man, aged 20 years, was sent from County Cavan to the Royal City of Dublin Hospital on account of swelling of the abdomen and difficulty of breathing, and was admitted to the medical wards on August 24th, 1909. No history of any previous illness could be obtained except that there had been an attack of measles in childhood. There was no suspicion of syphilis, congenital or acquired, and no history of alcoholism. The present illness was stated to have commenced six months previously with pains in the chest and abdomen following exposure to severe cold. Three weeks prior to admission the abdominal swelling was first noticed.

On examination the patient was found to have considerable cyanosis and dyspnœa; the pulse was weak and irregular; the heart sounds were normal, with, however, some increase in the area of cardiac dulness; the lungs were normal, except for some hypostatic congestion at the bases. The abdomen was much distended with fluid, but the edge of the liver was palpable by dipping, and felt hard and firm at a level three finger-breadths below the costal margin. The superficial veins of the abdominal wall were distended, especially in the neighbourhood of the umbilicus. There was a trace of albumin in the urine, but no other abnormality; the blood showed some increase in the number of red cells, and there was a little œdema about the ankles and lumbar region. The diagnosis arrived at was that of cirrhosis of the liver, possibly of the capsular type, and constituting a part of the more general disease polyserositis. No cause for the cirrhosis could be suggested.

On the day following admission the abdomen was tapped and 175 oz. of serous fluid were removed. Very few cells were found in the fluid, those present being mainly endothelial. The removal of the fluid gave the patient great relief: the cyanosis disappeared almost entirely, and the œdema of the legs, lumbar region, and lungs disappeared altogether for some days. After about a week, however, the abdomen began to fill again, and at the same time a left-sided pleural effusion began to form, and on Sept. 5th extended as high as the fifth dorsal spine, a well-marked paravertebral triangle being present on the opposite side. Coincidently the cyanosis and dyspnœa again became marked, and it had just been decided to again tap the abdomen when the fluid began to subside in both pleural and abdominal cavities. Ultimately the pleural effusion completely cleared up, and only a small amount of ascitic fluid persisted. The patient returned home to the country on Oct. 17th at his own request.

Almost immediately after leaving the hospital the abdomen again became swollen, and the patient was compelled to remain in bed. He accordingly again returned

to hospital on Jan. 22nd, 1910, and was tapped the following day, 210 oz. of fluid being removed. His general condition was much the same as during his previous stay in hospital. The fluid rapidly re-accumulated, and a further tapping was necessary ten days later, and from that date up to April 23rd the abdomen was tapped every fortnight, the average amount of fluid removed being 200 oz. It was then decided to try the effects of an operation, and in consequence Mr. Stoney was asked to see the case, and he performed the operation described below on May 7th. At the operation the diagnosis of cirrhosis of the liver was confirmed. The liver capsule was firm and white, and the general peritoneum was much thicker than normal.

The patient was anæsthetised with ether and the abdomen was opened close to the left linea semilunaris by a 5-inch incision reaching to just above the umbilicus. The sheath of the rectus was opened and the muscle displaced towards the middle line, and the posterior wall of the sheath and peritoneum were opened together. A large quantity of fluid (over two quarts) was allowed to escape from the abdominal cavity, though this was by no means all that it contained. The vessels, especially the veins, of both the posterior and anterior abdominal walls were greatly enlarged. The parietal peritoneum was thick, whitish, and somewhat rough, with slightly granular red patches scattered over it. The liver was enlarged, firm, and smooth, with no adhesions; the spleen was about normal in size, firm, and with a few adhesions between its parietal surface and the abdominal wall. The intestines were pushed over to the right, and the left iliac fossa was freely exposed by full retraction of the edges of the wound; a curved needle, threaded with thick twisted silk (No. 10), was passed through the peritoneum covering the posterior abdominal wall outside the iliac colon from above the crest of the ilium to below Poupart's ligament by means of four or five stitches, each about an inch in length, so that the strand lay alternately in the muscles of the lumbar region and iliac fossa and in the peritoneal cavity; the upper end of the suture which lay free in the abdomen was knotted, and the lower end was pushed by means of a director into the tissues of the thigh, passing behind Poupart's ligament. Three parallel strands of this nature were passed, all to the outer side of the iliac colon. In a similar manner three strands of the same silk were passed through the peritoneum and muscles of the anterior abdominal wall parallel to the incision, two to the inner side and one to the outer; these were about eight inches in length and each end lay knotted in the peritoneal cavity. All the sutures were drawn taut so as to leave no loops projecting into the abdomen which might afterwards allow a piece of gut to become caught under them. The parietal peritoneum and posterior wall of the sheath of the rectus were then united by a continuous suture of thick plaited silk (No. 8), leaving, however, a small opening in the upper part through which a piece of the omentum was drawn out and stitched to the sheath of the rectus behind that muscle. The rectus muscle was then replaced, a few points of catgut being inserted between its outer edge and the external angle of the sheath to hold it in position, and the incision in the anterior wall of the sheath was closed by a continuous catgut suture. The skin edges were finally united by Michel's clips and the wound was dressed with collodion. There was no rise of temperature after the operation and the clips were removed on May 13th, when the wound was found firmly healed. For the next fortnight the abdominal wall was supported by two strips of plaster across the line of the incision to prevent stretching of the cicatrix.

The silk used for the operation was boiled for an hour on the previous evening; it was then stored in carbolic lotion during the night, and the next morning was again boiled for an hour and taken straight out of the steriliser as required during the operation.

Neither at the first dressing, when the skin clips were removed, nor at any subsequent time during the patient's stay in hospital was any œdema found either around the wound or in the thigh below Poupart's ligament, although a careful watch was kept for its appearance.

Subsequent to the operation some ascitic fluid again collected, but more slowly and less abundantly than before, and it was thought advisable to tap the abdomen on June 17th, six weeks after the insertion of the silk drains. On this occasion 136 oz. of fluid were removed. No further accumulation of fluid took place between that date and July 8th, when the patient returned home. During the summer the man took part in the ordinary work of a farm and felt perfectly well, except that his breath was rather short if unusual exertion was undertaken. On Nov. 12th, six months after the operation, he returned to hospital at our request, as we were anxious to ascertain his condition. He still showed a little blueness about the lips, but otherwise was apparently well. The abdomen was almost normal in size and contained practically no fluid; the liver was, of course, still palpable and enlarged; no œdema in the neighbourhood of the scar could be detected, so that the result if attributable to the operation left nothing to be desired.

In reporting the case we do not wish to claim that the improvement which has occurred is necessarily the result of the lymphangioplasty, as we are, of course, aware that ascites of the type here presented may disappear spontaneously, as actually occurred for a time in this case during the first stay in hospital, or may disappear after a simple laparotomy. The fact, however, that some fluid re-accumulated after the operation suggests that the mere laparotomy was not of itself the cause of the later improvement, but rather that the re-accumulation took place prior to the establishment of an efficient circulation *viâ* the silk lymphatics, and that once a sufficient circulation was attained no further transudation accumulated.

As regards diagnosis, the existence of chronic fibrous peritonitis with hepatic cirrhosis was demonstrated at the operation. The further suspicion of involvement of other serous membranes is suggested by the pleural effusion and by the existence throughout of cyanosis without valvular disease of the heart; if, however, adherent pericardium is already present, it is not detectable by physical signs. It may be added that an examination of the blood disproved the possibility of the cyanosis being due to intestinal intoxication, and that a careful investigation, including the inoculation of guinea-pigs with some of the ascitic fluid, negatived any suggestion that the chronic fibrous peritonitis was of tubercular origin.

Dublin.

MEASLES: ITS TREATMENT AND PREVENTION.[1]

BY ROBERT MILNE, M.D. ABERD.,
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THE present outbreak of measles in London and the country, combined with the very extensive, severe, and fatal outbreak among our naval cadets at Dartmouth, necessitate my laying before my medical brethren my experience in the treatment of the same. All the more so as measles has been so fully discussed in the lay press, thereby causing widespread anxiety and excitement. Further, the present agitation for the notification and isolation of measles, as has been the case with scarlet fever, demands that my experience be laid before the medical public. This will show such to be altogether unnecessary and unwarrantable; for the moving of delicate children at such a time can only be attended by the most serious dangers to the little patient. I have already proved[2] such a proceeding to be altogether unnecessary in scarlet fever patients, even when in poor and overcrowded rooms; and shown that it is an enormous financial waste of millions of pounds every year. Besides, it greatly increases the patient's danger in both cross-infection and complications.

When the *Medical Annual* of 1910 appeared I had some correspondence with Dr. ——, the reviewer of my work on scarlet fever, on his review, of which I complained. In the course of 1910 I published two papers, from which I quote the following:—

> The writer in the *Medical Annual* for 1910 quotes a case of infection from a new coat from a child who had scarlet fever. The coat was wrapped in paper and kept in a drawer for 12 months. All the other clothing had been destroyed. Then it was given to a girl, who in a few days developed scarlet fever. He quotes earlier in his paper the following: "Scarlet fever broke out in an institution in which were four women (each nursing an infant of 4 months old) and 22 children of 2 to 6 years of age. Every one of the 22 children contracted the disease, together with one of the women."

[1] A paper read before the Section for the Study of Disease in Children of the Royal Society of Medicine on March 28th, 1911.

[2] The Home Treatment and Prevention of Scarlet Fever. James Nisbet and Co., 22, Berners-street, London, W.C.

Now contrast and compare this with the following: On Feb. 1st, 1910, the sister-in-charge of the Receiving Home at Dr. Barnardo's Village Home had occasion to take some of the children in residence to London. They mingled with many children. Returning homewards, the sister remarked that she hoped that none of the children had contracted any infectious trouble. On February 4th one of these children was found to have scarlet fever, with typical rash, with characteristic tongue and throat. She was 7 years of age. In the same room were 24 children, under 6 years of age. The patient was at once treated in the usual way. She peeled freely all over. There was no complication. Neither was there any infection of other children. This, although she was in the same room with others all the time, except when they went out to play. Then after ten days she was out of bed, and mingled freely with them in all their games. All the time toys were freely interchanged. Not only so, but after the tenth day she came daily in contact with altogether 128 children. Of these, 62 were under 7 years of age. When the scarlet fever appeared there were 63 children in residence. Sixty-five were admitted to the Home before March 12th. Of these, 43 were passed into the cottages in the village to mingle with 1300 other children, while 13 were boarded out. Among the medical men who inspected this case most carefully were hospital experts, public health men, literary medical men, and private practitioners. When in the earlier peeling stage, several of these visited at the same time. The 24 children were in the room. We first spoke to them and made friends. Then I turned to the patient and said that this was the case I had invited them to see. Speedily they were round the bed, and the wee toddlers also joined with open eyes and mouths and eager faces, as if they understood all. The medical men looked in wonder at the wee ones among themselves, pressing against the bed. The peeling was first examined, then the tongue, nose, and glands. Both a medical officer of health and a scarlet fever expert remarked that there was no question of this being a case of scarlet fever. They were intensely surprised; they contrasted it with the present isolation system, and noted the saving of money and of worry that must result; for the said result was merely a question of time.

When I read a paper before the British Medical Association in July, I was able to give a cordial invitation to all medical men to visit Dr. Barnardo's Homes, and to see four cases under treatment. They had been seen by other medical men. Two were in the hospital of the Homes. One had been, since the first day of the disease, for four weeks in the surgical ward with 15 other patients, and lay between two cases operated on for inguinal hernia two days after his admission. After the tenth day he was up and about the ward, freely peeling all the time. The other was in a ward with seven other girls. The third case was in a Branch Home with over 50 little girls, and after the tenth day mingled freely with them at play, at work, at meals, and slept in the same room as many of them did. The fourth case was at the Village Home, and was for ten days with five others, and after the fourth day with 13 other children.

To the members of this Oxford Branch of the British Medical Association I am also able to give a most cordial invitation to inspect some cases at Dr. Barnardo's Village Home. For there were three children under treatment there; children who were inspected some time since by three of your members. One peeled more freely than any case I have seen. She had, moreover, a most erratic temperature, yet she had no complications of throat, glands, nose, ears, or kidney trouble. This child, and the second case, was with some five others, two of whom were under 3 years of age. The second case was discharged after some ten days, and is at school, peeling, and mingling with some 1300 others.

The third case occurred in our Receiving House at the village. On the children's arrival they are taken here, and kept from one to three, or sometimes more, weeks. They are thoroughly washed and cleansed. In the same room with this case were 19 children. Six of these were from 1 to 3 years of age, six from 3 to 7, and seven from 7 to 15. After ten days she was out of bed, and mingled with 60 other children from babyhood to 15 years of age. .....

Could anything more aptly parallel these outbreaks? Could the annals of medicine afford a greater contrast in the results than that given by my reviewer, and these cases in Dr. Barnardo's Homes, and those at Kingstown? Surely my reviewer by next year, having read all the facts, will find the treatment is, after all, of some value.

The matrons in our hospitals are most enthusiastic over the treatment. One wrote: "I thought Dr. Milne was insane when he said to me, 'Have this child rubbed with eucalyptus oil, and his throat treated, and put him in the ward with the other children.' During the 11 years I was in the hospital we had a large number of cases, yet I do not know of one instance in which the infection spread, or complications ensued." Our present esteemed matron, Sister Gwendolen, writes: "I consider it one of the greatest benefits to both hospitals and patients that has been made known in recent years. No one who has known what an upset a case of scarlet fever causes in a hospital, in isolation, quarantine and disinfection, can fail to realise what a boon it is. My first experience was, I must say, a great shock. The case was brought into the surgical wards (16 beds) for operation. The boy speedily developed scarlet fever. The resident medical officer, recently appointed, isolated the case. On Dr. Milne's visit, next day, he was put up among the 15 other patients in the ward, where he remained all the time. Now I have had over 40 cases treated in this way, and cannot say too much in its praise. I sincerely trust it may speedily be in general use not only in hospitals, but in the homes of both rich and poor."

Since I received your invitation I have had not a few communications similar to the one I quoted before the British Medical Association meeting from a medical officer of health, of a friend who had a case in a small home with two rooms and with six children and the parents. His friend carried out the treatment personally, and with every success. He did not notify, or it would have been removed. "You must not give names," he said, "or you may get me into trouble." Over a hundred medical men have written to the same effect. One stopped me in the street, for he said he had wished to see me for some time. He had repeatedly carried out my method with every success in the poorest surroundings. I asked him why some of them do not come forward and publish the cases, for I have the same story from so many. "We daren't," he said, "we do not notify the cases. Were we to do so the sanitary inspector would visit, and we might as well proclaim it in the street. Cases that I have had meant ruin to the people had the neighbours known."

Yet in spite of all this, and much more, I must refer to the criticism of my work by the same "Outlook" and "Pilot" on acute infectious diseases, in the *Medical Annual* for 1911, to hand on March 8th, with editorial preface of February, 1911.

Surely it is no fair "Outlook" to skip scores of cases that have been seen by hundreds of medical men and by dozens of superintendents of isolation hospitals, including himself—who saw cases at his own request in various stages, saw them in the earliest stages, red as a lobster, and examined throats, &c., and saw others peeling, yet failed to find any complications. He saw them lying so close to serious operation cases that the patients could touch hands with one another in their beds. Surely it is not the part of a good and expert "Pilot" to call for the ages of my 1908 cases, and to refer mostly to what I published in the *British Medical Journal* of 1908 and January, 1909, when at the British Medical Association meeting in July, and published in the *British Medical Journal* of Sept. 3rd, I told of 24 children in one room, all under 4 years of age, all unprotected so far as known, one of whom had scarlet fever, and spent the whole time in the room with the 23 others. Yet our "Outlook" and "Pilot" neither condescends on this nor on my Oxford paper, published by two medical journals (the *Medical News* and the *Medical Magazine*) one after the other, "as the facts were so important." Neither does he mention that both the members of the British Medical Association, as well as the Oxford Branch, were invited to inspect four and three cases respectively, in July and November, which had been seen by other medical men. These were with from 5 to 1300 children.

To my reviewer it seems to be moonshine that by this method we have neither complications nor return cases. For in neither year does he, in some six pages, refer to this acknowledged fact. In both, however, he says that the same results would have been obtained without treatment (1910), that it has not been shown that eucalyptus has anything to do with the result (1911). Well did Dr. Goodhart say, as he saw some of these cases, "How hard it will be for some medical men to believe in the treatment in spite of the facts," facts of which Dr. Bond said, "Scepticism was no longer justifiable," and regarding which Dr. Seaton, in his Chadwick Lectures, London University, said, "I have seen some of Dr. Milne's work. The time has now come when the Local Government Board must give power to medical officers of health to carry out this method, or a Bill must be passed by Parliament to enable them to do so, as legally they cannot do it."

A medical man, after a meeting held on behalf of Dr. Barnardo's Homes, said that he knew something of the good work done in them, although he had not seen the Homes, but he had read Dr. Milne's first paper in the *British Medical Journal*, and was so impressed by it that he adopted "Milne's method"; that he found it so satisfactory that other medical brethren joined in, and that last year it had saved their rates fourpence in the pound. Therefore he thought they ought to be liberal in their gifts to the collection. I might fill pages with such testimonials, but enough, surely.

Is there not something disingenuous in the remark "that this is not an unusual example of a village outbreak of scarlet fever"? Where, I ask, will he find such a record among so many children? An account of the worst I have given, and it was criticised in the *Medical Annual* of 1910. On the other occasion the cases were not half so many; while on no other occasion has it approached what is criticised. Where, I ask, is the school or village with 1300 children with such a record? For during these 30 years over 12,000 children have passed through the village with altogether 245 cases of scarlet fever. I must also note that the critic says that I use 1 in 20 instead of 1 in 10 carbolic oil. Other points are equally worthy of criticism, but I must pass on. "We have given the facts, but," as Lord Beaconsfield said, "we are not bound to supply the understanding."

Had I not corresponded with my reviewer in 1910 I would not have thus written. For my reviewer alone of all I have met or who have written to me says that this method, based upon 30 years' experience, and by other writers declared to be revolutionary, epoch-making, and the greatest event in medicine, *is of no value*. The advantages claimed for the home treatment and prevention of scarlet fever have been most fully realised by thousands of medical men in this and in other countries. An opportunity for its triumph will

come before the fall of the year. I shall now give some details of the treatment as carried out in both scarlet fever and measles.

When first I adopted the method of treatment as laid before the medical public, I used carbolic oil 1 in 10. For 27 years, however, I have used pure eucalyptus oil. During the first four days in these cases, commencing at the earliest possible moment, I have pure eucalyptus oil gently rubbed in, morning and evening, all over the body, from the crown of the head to the soles of the feet. Afterwards this is repeated once a day until the tenth day of the disease. The tonsils and pharynx I always swab with 1 in 10 carbolic oil every two hours for the first 24 hours, very rarely longer. In swabbing I place a firm mop of cotton-wool, the size of the last joint of the patient's thumb, on the end of a pair of forceps, or tie on a pencil, &c. I thoroughly soak the wool in the carbolic oil, and then swab the tonsils and the pharynx as far up and down as possible.

The advantages realised by this method, not only in my experience, but in that of every private practitioner who has carried out the method in scarlet fever, are: 1. When this treatment is commenced early—and this is vital—secondary infections never occur, and consequently complications are unknown. 2. With this treatment carefully carried out the children may occupy the same room, and even the same bed without risk of infection. 3. The economy of the treatment. An ordinary case in the isolation costs £10; this, perhaps, 2*s*. Therefore it means a saving of millions of pounds annually. 4. Its household economy. The mother is free to attend both the patient and her duties. The father is free to go to work without the slightest risk, and the children equally free to attend school. 5. No after-disinfection is necessary, for the disease having been destroyed nothing remains. 6. I have frequently been asked about the disinfection of the patient's spoons, crockery, &c., as these are such a trouble in an ordinary household. Well, the fact is, there is no disinfection or in any way a keeping of them apart. They are all collected together, washed in the ordinary way, and served out indiscriminately on the next occasion.

Thus there is no interruption of the domestic, scholastic, or business affairs of the household. These advantages I now fully claim, as a result of the same treatment, for measles. This treatment I have used for 25 years in measles, with the exception of the carbolic oil, which I have adopted for less than half that time.

I have not proved in measles that the children may sleep in the same bed. This, however, I have proved, that they may safely occupy and sleep in the same room with 750 ft. of cubic space, and with beds so close that the ordinary sized children can hand toys from one to the other. Again, with measles, as with scarlet fever, there is no necessity for destroying the toys, books, &c. These may be safely interchanged as soon as the child is able to play.

I quote the following from the *British Medical Journal*, the *Medical Times*, and Proceedings of the Royal Society of Medicine:—

The importance of this method of treatment is shown by a question a former President of the Local Government Board asked me several years ago: "If I could explain how it was we had so few epidemics among the children under my care in Dr. Barnardo's Homes, and how, when we did have cases, they were so few in number, while in our schools we have so many epidemics, and these affecting half, or sometimes three-fourths, of the children in residence." It is further shown by a medical officer of health and chief lecturer in one of our first medical schools who, as we drove together to see some of the cases, asked how many beds we had in our isolation hospital in the village homes with some 1300 children. I told him we had not one, or isolation accommodation of any kind. "You were bound to have," he remarked, "anything from 150 to 300 cases needing isolation (e.g., measles) every two or three years." He was greatly surprised that for some twenty-five years we had not had twenty such cases at one time.

I quote from former papers the following:—

British Medical Journal, Oct. 21st, 1908.—For several years I have adopted the same method of treatment with regard to measles. The great difficulty found in such is the infectious natnre of the malady before any signs are definitely manifest. When, however, the eucalyptus oil is used at the earliest possible moment I have found that it has entirely stopped the epidemic spreading. When such a case has occurred I have kept the aroma of the oil in the rooms, and had a little sprinkled on the beds day by day, as well as on a handkerchief in the chest of the children. This has, I have found, entirely limited the epidemic to at most one or two cases who had been playing with the first child on the attack coming on, while in many instances it has cut the epidemic short. This spring an outbreak occurred in Her Majesty's Hospital in a ward containing twelve children, all under four years of age. The child was isolated and the above plan carried out. Three cases occurred on the fourteenth and fifteenth days, but none afterwards.

British Medical Journal, Jan. 16th, 1909.—I should like to be permitted to add a word of warning on the subject of measles. Since my paper was written measles appeared in our receiving home, where 60 children were in residence. The epidemic was limited to the first infection—that is, to cases occurring within 12 to 16 days after the first appearance. Yet I cannot speak with the same confidence in regard to measles as with regard to scarlet fever. I should like to emphasise this, because correspondents have written to me as if I recommended my line of treatment being pursued with equal confidence in cases of measles as in cases of scarlet fever.

British Medical Association paper, July, 1910.—Measles will, I trust, soon be in line with the experiences I have given of scarlet fever.

I quote from reprint from the *Medical Times*, from my Oxford paper, Nov. 24th, 1910:—

You may have noted that in this paper, as in my other publications, I have referred to measles. The success of this method in measles is nearly equal to what I have realised in scarlet fever, only I have not fully succeeded in keeping them together from the first. Yet for many years there has been no spread except occasionally the first infection.

In my earliest work in Dr. Barnardo's Homes, and among the same class of children, we had the usual experiences. We had to close the schools and turn the class-rooms into wards and some of the cottages into a hospital, for in one epidemic we had 144 cases when the number of children was 600. Now we have over 1300 in the same home, yet for 25 years we have not had 20 cases at one time, and this only on two occasions. Dr. Armstrong read a paper on measles when I read one on scarlet fever on Nov. 26th, 1909. He stated that in 12 years he had 3260 boys in the school and 612 cases of measles. We had 600 girls in Dr. Barnardo's Village Home 25 years ago; 11,000 have been admitted since, while over 1300 are in residence. During all these years we have had 234 cases of measles. This I attribute entirely to the method of treatment we have carefully carried out. For many years I used eucalyptus oil only, as in the treatment of scarlet fever. In more recent years I have adopted the plan of treating the tonsils and pharynx with 10 per cent. carbolic oil, as in scarlet fever cases, every two hours. The advantage of this treatment is that for these 25 years we have had no epidemic. Neither have we found cases pass beyond the first infection. Further, that the virulence of the disease is greatly modified and dies out very rapidly. For I fail to find any secondary infections of measles in my records of these 25 years. In some of our larger homes, where the children attend many schools (e.g., from one home they attend 11 different schools), to guard against outside school infection during these tests I kept the children from school and sent them for hours daily into the fresh air for games. The trouble has not passed the first infection for years, whereas on their return to school it reappeared. Both in the hospital of Dr. Barnardo's Homes, as well as in the Girls' Village Home, Barkingside, I have this year and on different occasions had eight cases of measles in the same ward or in the same bedroom with little children who had no previous attack of measles to protect them, yet there was no infection or complication. These children were 2 years of age and upward. The experiences of the past few months may be shown thus:—In one of our homes for 120 boys, from 5 to 8 years of age, a case of measles occurred. To prevent outside infection I kept the boys from school. Three first infections followed, which were very mild, then completely ceased. After their return to school fresh cases appeared. In our deaf and dumb home a case occurred. The patient was a delicate child and nearly blind. For more careful nursing he was removed to our hospital and placed in the babies' ward. Three first mild infections occurred in the home, then the trouble ceased. The case taken into the hospital was placed in the babies' ward, after being treated with eucalyptus and carbolic oil and a gauze curtain placed over him. There was no infection of any child in the ward, although the ages were from 2½ to 5 years, and unprotected. In one ward at the infirmary of the Village Home two cases were with four others from 7 years of age. In another was one case with five others from 7 years of age. In the third ward was a case with five others from 3 years of age. These children were found to have been unprotected by a previous attack. In one of the cottages from which these children were taken there were two mild cases of first infection. On March 4th a case of measles occurred in a ward with 15 others. He was treated at once. The rash appeared in full. Naturally we were anxious as the twelfth day approached. We watched the others closely until the sixteenth day was passed. There was neither infection of others nor any complication.

Now, what must I say in regard to those cases I am about to deal with? When I visited one of our homes with over 100 little boys in residence on March 8th I found one very

delicate boy in bed in a dormitory where 23 others slept. The ages of these are: seven are 5 years, ten are 6, two are 7, three are 9, one is 12, and one is 14 years old. The two older boys do part of the work in the home. The boy's temperature was over 103° F. Coryza and well-marked Koplik's spots were present. The gums were red and the soft palate was slightly spotted with small red centres. There was not, however, the slightest appearance of any rash. I felt here was something for you to-night. He was treated in the dormitory with these 23 other boys sleeping in the same. He had eucalyptus oil gently rubbed in over his body, 1 in 10 carbolic oil to his throat, and a thin muslin curtain over his head and chest like a small tent and sprayed with eucalyptus. All the boys who slept in the dormitory were kept from school, and had eucalyptus as I have described—viz., a little sprinkled on their bed, and a little on their handkerchief carried in their chest, morning, noon, and evening. By mistake the other boys in the other part of the home did not have the eucalyptus thus for some eight days later. The usual method was carried out in one part of the home, while in the other special dormitory the new method was used. Thus the two methods are seen side by side. On inquiry into their history one boy was found to have had measles in this same dormitory three months before. All the others were unprotected by an attack while with us. On admission to the homes (see *The Child*, March, 1911) the children's histories are carefully inquired into, and an attack of measles or other infectious disease is recorded. From these records 20 are unprotected by a previous attack. Now what is the result? Twenty-four hours after I first saw the boy the rash began to appear. He had a very severe attack. He was in the dormitory some five days where these 23 boys slept, 20 of whom were unprotected. Moreover, on the first and second day he was joined by two fresh cases of measles from the other part of the home. They were treated exactly as the other. Then, because the lad was delicate, and on account of the intense cold and the difficulties of keeping the temperature at 60°, the three were moved to a warmer dormitory. By the sixth day two more cases occurred in this dormitory. By the same time from the other part of the home up to the fifteenth day of the outbreak we have altogether 11 cases. The boys in the babies' dormitory were kept all this time from school. All the household, however, mingled freely at play and at meals. Could anyone devise more crucial tests to bring out clearly the contrasts of the methods of treatment? Of the result in these two classes of cases as I have laid before you I had no doubt. More cases appeared from the other part of the home. After the infection contracted before the use of the eucalyptus oil becomes manifest it will cease among the others, while the cases thus treated will be mild. What about those in the babies' dormitory from the twelfth to the sixteenth day after having had three measles cases sleep in the same room night after night, and mingling day by day with those who were in the most infectious stage? You will not wonder that I thought of it some of these nights until the morning began to break! You may guess how eagerly I watched these unprotected boys as I visited the home from time to time. Now, if this trial of the two systems of treatment side by side failed, I knew I could throw myself on your forbearance and receive your sympathy, as there are so many chances of failure. But at the end of the sixteenth day there was a complete triumph all along the line.

The tendency to complications is greatly lessened by this method of treatment with eucalyptus oil, and with the more recent use of carbolic oil 10 per cent. for the tonsils and pharynx. I may say that, from my experience, it has proved equally efficacious as it has proved to be in scarlet fever cases; for, with the exception of broncho-pneumonia in very delicate little children, such are unknown. Even the broncho-pneumonia is, I fondly hope, a thing of the past. When the patient is first discovered, if possible when suffering from coryza, or if Koplik's spots are visible before the rash appears, as well as when the rash is appearing or out, the patient is treated at once and put to bed. A large bed-cradle is placed over the child's head and chest. This is then covered with a light fleecy gauze and sprayed or moistened from time to time with eucalyptus oil. This is done to entangle the phlegm, and prevent the germs in coughing being carried beyond the disinfecting power of the eucalyptus oil, and so infecting the other children; for in coughing these germs may be carried to the distance of 20 or 30 ft. It is a great advantage that the child is thus able to see all that is going on around.

For the healthy children who have been exposed to infection I have a little eucalyptus oil sprinkled on their beds at bedtime, and in the morning, noon, and evening a little placed on a handkerchief and carried in their bosom. Thus they have a continuous aroma of eucalyptus being inhaled. It is to this treatment that I attribute the fact that for all these years we have required no isolation hospital for these diseases for the children under my care. In corresponding schools the necessary isolation accommodation is, I believe, from one-third to one-half or one-half to two-thirds of the number of children in residence. The economical saving thus effected is very great, while the benefits to the patient are incalculable. It is worthy of note, too, that in these cases I have given our cubic space is only about 750 cub. ft., while in the isolation hospitals it is 2000 cub. ft. and the beds 15 ft. apart.

As in the treatment of scarlet fever, I asked that this might be taken up and tested thoroughly, under careful supervision, for I had not the slightest doubt of its triumph. This has been abundantly realised, so now I ask that my medical *confrères* do the same for measles. Neither for this result have I any doubt. It may be that ere long something will have to be said about diphtheria. In regard to these three diseases—scarlet fever, measles, and diphtheria—I would again most strongly urge a point which I have dwelt fully upon in my book—viz., the serious and terrible danger that lurks in pencil infection. In so many of our schools the children have no pen, pencil, or ink-eraser of their own, yet twice daily, at least, these are used. Every child puts the pencil in its mouth. Then they are collected, and indiscriminately handed out on the next occasion. Could the old enemy devise a more certain method of disseminating disease?

Bow-road, E.

A CASE OF

ACUTE HÆMORRHAGIC PANCREATITIS; OPERATION; RECOVERY.

BY E. GILLESPIE, M.B. GLASG., F.R.C.S. ENG.,

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OWING to the great rarity of the disease termed acute hæmorrhagic pancreatitis I consider the case to be described of sufficient interest for publication.

The patient, a ward-maid, aged 33 years, single, was admitted to the Prince of Wales's Hospital under my care on Jan. 28th, 1911, with the following history. She stated that she had always enjoyed good health except for a feeling of discomfort caused by flatulence from time to time. Menstruation had been regular. The present illness began about 8.30 P.M. on Jan. 27th with a feeling of discomfort caused by flatus. This feeling, instead of passing off as usual, increased in intensity, until it became actual pain, which was referred to the upper part of the abdomen. The pain had remained more or less constant up to the time of admission to hospital. Vomiting set in early and had continued until the time of admission. The bowels had not acted.

On admission the facies was anxious, the eyes were sunken, the complexion had a livid tinge, but the mucous membranes were very pale. The vomited matter consisted of small quantities of mucus. The temperature was 98° F.; the pulse was 120, of small volume, and low tension. The tongue was pale and moist. The patient complained of pain in the upper part of the abdomen, referring it specially along the left costal margin and down into the lumbar region. There was no distension, but the movements with respiration were restricted. On palpation tenderness was elicited over the region in which she felt the pain. There was some rigidity of the recti muscles above the umbilicus, but this was not nearly so marked as in cases of perforation of a viscus. The percussion note was resonant all over. The liver dulness was very much diminished from below upwards. Pelvic examination was negative. Examination of the chest and of the urine showed nothing abnormal.

Operation was performed on Jan. 28th. Anæsthesia was induced by chloroform, followed by ether given by the open

method. The abdomen was opened above the umbilicus by a vertical incision, and separation of the fibres of the left rectus. The lesser sac was at once seen to be filled with dark blood. No fat-necrosis was observed. The gastro-hepatic omentum was freely opened and the blood was evacuated. The peritoneum over the pancreas was freely torn and more blood removed. The lobules of the pancreas showed up a light yellow against the effused blood. The gall-bladder and the bile-passages were palpated but nothing abnormal was found. The patient's condition was so serious that no further examination was attempted. Gauze was passed down to the pancreas and packed along it from tip to head. A rubber tube was also passed down beside the emerging piece of gauze. The abdomen was closed in a single layer.

On Jan. 29th sickness had not been frequent. The pulse was still small and rapid, its rate being 140 per minute. The temperature was 101°. The patient looked more comfortable. There was a free blood-stained discharge from the wound. On the 30th her condition was satisfactory. The pulse was rapid; the temperature was 100·2°. There was a free discharge. On the 31st the pulse was dropping in rate and improving in tension. The temperature was 101°. The gauze packing was removed. From Feb. 1st to 6th there had been a slight daily rise of temperature, sometimes to 101°; the pulse was still rapid, but the volume and tension were much better. The colour was gradually improving. On one occasion the patient had an attack of abdominal pain and discomfort which passed off after the bowels had acted. Examination of the stool showed a distinct mass of a substance too formed to be blood-clot. Unfortunately, the stool was destroyed before it had been properly examined.

The further history was uneventful. The stitches were removed on Feb. 8th. The anæmia rapidly disappeared, the pulse-rate dropped, and the temperature kept normal. The patient took her food well and there was no trouble in keeping the bowels regular. The urine was repeatedly examined for the presence of sugar, but no reaction was obtained. The patient was out of bed and left hospital on Feb. 24th with the wound healed. She has since reported herself and states that she is in good health.

Remarks.—The case reported shows the features which have been well termed "an abdominal catastrophe." It presented a confused picture of shock and of hæmorrhage, so much so that but for the localisation of the pain to the upper abdomen and the history of regular menstruation the diagnosis would have been that of a ruptured ectopic gestation. From the literature the situation of the pain seems to be very varied. It may be referred to the right along the costal margin, or perhaps more commonly, as in this case, along the left costal margin down into the lumbar region. Rigidity of the recti was present, but it was neither so marked as in cases of perforation, nor so well defined as has been insisted upon by other observers (Moynihan). There was nothing which could be called distension, but it is of interest to note that diminution of liver dulness was present. The onset was quite definitely gradual; the pain increased in intensity until it was so severe as to attract attention. No light is thrown on the obscure question of causation. As regards treatment, there can be no question of the comfort which operation afforded the patient.

Harley-street, W.

AN UNUSUAL CASE OF PERICARDIAL EFFUSION.

BY JAMES RAE, M.A., M.B., CH.B. ABERD.,
ASSISTANT MEDICAL OFFICER, PARK HOSPITAL, HITHER GREEN, LEWISHAM, S.E.; LATE HOUSE PHYSICIAN, CHELTENHAM GENERAL HOSPITAL.

PERICARDIAL effusion is most commonly preceded by a rheumatic infection, but tubercle, influenza, and renal disease are associated with it only less frequently. These several conditions one may expect to recognise by their proper symptoms; the nature of the fluid produced, if effusion occur, varies with the cause. The following notes refer to a case in which two of these factors were recognised, and which may be of interest by reason of its termination.

The patient, a boy aged 18 years, was sent into Cheltenham General Hospital on May 5th, 1910, with the diagnosis of pericardial effusion. He had been under the care of Dr. Adair Dighton, who has kindly allowed me to use his records of the early history of the case. The patient was an only child and knew nothing about the health of his relatives. Scarlet fever at the age of seven and two attacks of influenza were the only illnesses he himself had had. He was playing football just after Christmas, 1909, but in the last days of that year began to feel ill in a way which made him think he was about to have a third attack of influenza. He continued to follow his business of shop assistant for three weeks, until one night when in bed he found he could not breathe properly. He had to get up and made an attempt to reach the window. Being unable to walk he returned to bed. At this time he felt as though his heart were hindered.

On Jan. 21st, 1910, he sent for Dr. Dighton, who found him to be suffering from influenza. His temperature remaining high and his pulse being consistently bad, he was seen in consultation with Dr. J. R. Collins on Feb. 1st. Dulness was then found, extending from the clavicle to the seventh rib in the left parasternal line, and from 2½ in. to the right of the midsternal line to the left nipple line at the level of the fourth interspace. This was interpreted as meaning pericardial effusion, and as the condition did not improve, on March 11th paracentesis was performed by Mr. J. Howell. The site selected was in the fourth left interspace 2 in. from the middle line. A pint of serous fluid was removed, his pulse (which had not been perceptible for three weeks) returning as the dulness disappeared. The fluid was only slightly tinged with blood, and cultures made from it showed no growth of any micro-organism. He improved in colour after the tapping and lost a frequent dry, painless cough which had troubled him, particularly when he lay on his right side. For two days he felt better, then his breathing became embarrassed, and five days after paracentesis, heart dulness began to increase until March 29th, when two pints of fluid similar to the first were removed, puncture being made as close to the former site as possible. His condition improved only temporarily and rapidly became worse in exactly the same way as before. On April 14th dulness reached the right mid-axillary line. This accumulation, believed to be pleural, was tapped in the fifth right interspace 1 in. external to the nipple line; two pints of fluid were removed. For eight or nine days afterwards he felt quite comfortable, except that occasionally he found breathing difficult. The fluid then began to return, and as it reached its former extent on May 2nd more radical treatment was considered to be necessary, and for this purpose he was removed to the General Hospital on May 5th. At no time were there any signs of lung trouble. He was kept on fluid and soft food, and was always markedly constipated.

On the patient's admission to the hospital his temperature was 95 6° F., pulse 112, and respirations 44. In bed he lay on his right side; his face was very pale, his ears livid. Cardiac impulse was not visible or palpable. The præcordial dulness reached the second interspace in the left lateral sternal line; the upper border of the third rib in the right parasternal line; and in the sixth interspace to a point 4 in. to the right of the midsternal line. The heart sounds were very faintly heard, and their rhythm was of the pendulum type. The left pupil was larger than the right; both reacted to light and to accommodation, and nystagmus was absent.

Mr. Howell decided to drain the pericardium; the operation took place three and a half hours after admission and was performed under local anæsthesia, with continuous inhalation of oxygen. A four-inch incision was made in the line of the seventh left costal cartilage and two inches of the cartilage were removed. When the pericardium was reached a hypodermic needle was used to explore and when clear, yellow fluid was drawn into the attached syringe the pericardium was incised. The cutting was at once followed by a gush of clear, straw-coloured fluid, with no trace of pus. Its escape was controlled by a finger in the aperture, with which the movement of the heart could easily be felt. Two pints of fluid were removed and a large drainage-tube 8 in. long placed in the sac, the edges of which were stitched to the chest wall and the remainder of the wound closed; he was then taken back to bed. He passed a fairly good night; his temperature in the morning was 99·6°, pulse 128, and

[1] According to Gruner ("Studies in Puncture Fluids," p. 162) a hæmorrhagic pericardial fluid indicates tuberculous pericarditis. Von Pirquet's tuberculin reaction was not performed, as the patient was irritable and in his serious condition it was not thought advisable to worry him.

respirations 32. Some serous discharge was found on the dressing; the amount of this decreased for four days, when a smaller tube was inserted. On the morning of May 11th he was troubled with a tickling cough. In the afternoon an exploring needle was introduced into the seventh right interspace one inch behind the posterior axillary fold, and 10 c.c. of clear greenish-yellow fluid withdrawn; his cough was at once relieved. At 5.45 P.M. he felt very ill and was cyanosed; brandy (℥i.) was given subcutaneously. A few minutes after this he became delirious. At 7.30 P.M. 600 c.c. of fluid[2] similar to the former were removed by aspiration from the right side. He collapsed after this, but rallied; morphia (gr. ¼) was given hypodermically, and after this he slept quietly, but had some restless intervals through the night.

For the three days following the patient's condition was fairly satisfactory; on May 14th thin, almost inodorous, pus was found on the dressing. The pericardial sac was douched out with cyllin solution (℥ss. to a pint of water); this procedure made him feel much more comfortable. Except for the first two days this douching was done through a No. 12 rubber catheter introduced into the wound, the drainage-tube being removed for the purpose. Douching of the wound with cyllin solution was done twice daily from May 21st to Sept. 5th. The evening temperature was highest (103·8°) on May 24th; it reached or exceeded 101° seven times up to and including July 29th; after August 13th it only once exceeded 99·6°. His pulse remained at or over 130 per minute until June 14th, after which it tended to be less frequent, but was never below 112 per minute. His respirations for the most part were 28 per minute. On June 29th he was taken out of bed for the first time since the operation; his weight then was 6 st. 12 lb. After this he rapidly and steadily improved until he weighed 8 st. 12 lb. on August 27th. He had a good appetite and generally slept well. About the middle of July he was able to walk about the ward fully dressed.

The condition remained much the same until Sept. 2nd, when the patient vomited after his breakfast. At midday he was given 300 millions of staphylococcic vaccine with the object of combating the secondary infection, enormous numbers of staphylococci having been found in the pus the previous day. He vomited again after each meal, but said he felt quite well, had no nausea or faintness; the following night he slept as well as usual. The vomiting recurred after food, but in other respects his condition was satisfactory until 2 P.M. on Sept. 5th, when his left cheek was noticed to be flatter than his right; his tongue, which he put out when asked, inclined to the right, as did his uvula; the grip on the right side was stronger than on the left; he was unable to find words to express himself. His blood gave a leucocyte count of 15,798. Next morning he was again sick after food; at 11 A.M. he began to talk senselessly; his head and eyes were turned to the right; the left elbow was flexed and spastic; the right resisted movement, but was not spastic; knee-jerks and ankle clonus were present on both sides, but the left was feebler than the right. From this time onwards he had to be catheterised; his urine was acid, never showed albumin, and contained a few granular casts and dicalcium phosphate crystals. In the afternoon he seemed quite bright, but his memory had gone and his speech was indistinct. All the evening he lay limply, but any part that was touched became rigid. The leucocyte count at 6 P.M. was 11,589. He was restless during the night, but lay more on his left side than on his right. In the morning his leg reflexes had not changed, but the right elbow was flexed and stiff; his eyes were central, and both corneal reflexes had gone. At 12.15 P.M. 13 c.c of turbid cerebro-spinal fluid were withdrawn, some intracranial pressure being evidently present. After this he became very cyanosed and did not recover for three hours. At 1.10 P.M. the eyes were divergent, and the right corneal reflex had returned. At 4 30 there were clonic movements in both arms; his pupils dilated, the left being the larger; the eyes were turned to the left, and slight rotatory nystagmus appeared. At intervals he took a long stertorous inspiration, and during the quiet breathing which followed this he made slow purposeless movements with his arms, particularly with the left arm; his legs were not moved. The leucocyte count at 6.30 P.M. was 15,486. At 11 P.M. his head was distinctly retracted; he had a quieter night.

On the next morning (Sept. 8th) the patient perspired freely on the left side, less freely on the right side. His eyes were central, the left pupil smaller than the right, this being the first time it had been noticed to be so since his admission. The reflexes on the left side were more active than on the right. His eyes were examined by Mr. Norman H. Pike, who reported that the discs were normal and that no congestion was present. He began to have dribbling from his mouth and slight incontinence of fæces. At 4.30 P.M. lumbar puncture was done. The following report was made on the fluid removed: "A slightly turbid fluid came out at the rate of about 120 drops per minute; 11 c.c. were obtained. After centrifugalisation, films were made from the deposit and stained. With B 6 eyepiece and 1/6 objective, 945 leucocytes were counted in ten fields—i.e., 94·5 leucocytes to the field. With B 6 eyepiece and 1/12 oil-immersion lens, the leucocytes in 50 fields were counted, the total number being 243. Of these 151 were mononuclear (62·14 per cent.), 92 were polymorphonuclear (37·8 per cent.). Many endothelial cells were present. This points to a tuberculous meningitis of some standing, with the supervention of an acute non-tuberculous process." The patient was quite comfortable after this. His wound did not discharge between the dressings. Next morning his arms were quite limp; knee-jerks and plantar reflexes were absent. At 11.30 his left pupil dilated very much, and both eyes showed nystagmus to the right. At 2.30 he became very cyanosed after he had been moved but recovered in about five minutes, and appeared to be asleep for two hours. After this his breathing approached the Cheyne-Stokes type and remained so until he died at 6.15 P.M.

Necropsy (performed 18 hours after death).—Body emaciated, with signs of commencing putrefaction over abdomen. Rigor mortis present; hypostasis marked. A weak scar about 4 in. long, with a circular opening about a third of its length from the upper end, ran from the xiphoid downwards and to the left. Head: Bones and dura normal; pia-arachnoid œdematous over vertex and showing a few scattered tubercles. At the base a considerable amount of firm chronic adhesion extended from optic tracts up the Sylvian fissures. Pus was entirely absent, but the separated surfaces showed carpeting with minute grey tubercles which were present in the aqueduct of Sylvius and in the lining of the ventricles. Some of the white matter in the interior showed softening, but otherwise no gross lesion was found. Chest: Pericardium and epicardium were both lined with a layer of greenish pus; both were thickened to about ¼ in. by gelatinous material. A tuberculous softened mediastinal gland was opened at the base of the heart. The heart muscle internally was of fair quality but under the epicardium was infiltrated to the depth of ¼ in. by massive fibro-caseous tuberculous deposit; this was seen all over the auricles as well as over the ventricles. Cavity of right ventricle was somewhat dilated, cavity of left very little or not at all; valves were normal. Lungs: Some slight pleural adhesions were present behind on the right side; the left lung was more adherent, and retracted; a very small amount of tubercle was present in either. Spleen showed tubercles in Malpighian bodies. Kidneys were large and venously congested; tubercles were very scarce. Suprarenal bodies showed a few yellow miliary tubercles subperitoneally. Liver: Sparse grey tubercles were found.

Lewisham, S.E.

[2] On cultivation this fluid proved to be sterile.

THE CHILDREN'S FRESH-AIR MISSION.—The annual meeting of this mission will be held in the court room of the Holborn Municipal Offices, 197, High Holborn, on Wednesday, April 26th, at 3.30 P.M., when the Mayor of Holborn will preside. Last year 3776 poor and ailing children were sent into the country by this mission, and the benefits which the children receive, as we have many times pointed out, must react for good upon the general health of the community. Cheques and postal orders should be crossed "London, City, and Midland Bank, Limited," and may be sent to the honorary treasurer, St. Peter's Schools, Onslow-street, Clerkenwell-road, E.C.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

LARYNGOLOGICAL SECTION.

Exhibition of Cases and Specimens.

A MEETING of this section was held on April 7th, Dr. P. WATSON-WILLIAMS, the President, being in the chair.

The following cases and specimens were shown:—

Dr. HERBERT TILLEY: 1. A specimen of Pedunculated Growth on an Elongated Uvula. The specimen was removed from a male, aged 30, who said the growth had been present as long as he could remember, but had produced no symptoms whatever. It was thought to be a small fibroma. 2. An improved form of Hay's Pharyngoscope for examining the larynx, pharynx, and post-nasal space. Many of the members were of the opinion that in most cases the old-fashioned mirror was just as good, or even preferable.

Mr. WALTER G. HOWARTH: A case of Chronic Laryngitis. The patient suffered from profuse nasal discharge, with crusts and also active necrosis of nasal septum, which gradually cleared under iodide of potassium. A year later the larynx became affected. The cords were seen to be red and thickened and later on again the cords improved, while swelling appeared in the inter-arytenoid space.

Dr. G. WILLIAM HILL: 1. Tracheolaryngostomy for Stenosis following Tracheolaryngotomy. The patient was a girl, aged 8, and a so-called high tracheotomy had been performed five years ago for diphtheria. Intubation tubes had been worn for three months, but stenosis quickly recurred on removal. An interesting discussion followed and the opinion of most members was that the treatment of these cases was very difficult and unsatisfactory as a rule. 2. Carcinoma of Œsophagus in a man aged 45, shown at the December meeting, 1910, when apparent cure had taken place after six prolonged applications of radium. The patient has had no application for four months, and there is now well-marked malignant ulcer lower down in the gullet. 3. A Feeding-tube which had been *in situ* 12 weeks.

Mr. P. R. W. DE SANTI: Two cases of men, aged about 50, suffering from Malignant Disease of Tonsil, Pharynx, and Tongue with Enlarged Glands. Both cases were deemed inoperable, but were shown with a view of obtaining treatment by radium if possible.

Dr. L. HEMINGTON PEGLER: 1. A case of Functional Aphonia in a boy aged 15. The aphonia was of three months' duration. There was no dyspnœa, cough, or stridor. The boy works in an atmosphere contaminated with irritating fumes. On examination the cords, which are deeply injected, failed to approximate on attempts at phonation. The voice had returned under the application of liquor ferri perchloridi. 2. Microscopic section of Bleeding Polypus of the Septum.

Dr. W. JOBSON HORNE: 1. A case of Laryngeal Tuberculosis in a boy aged 10. 2. A case of Perforation of Soft Palate in a woman aged 34. 3. A simple Insufflator for application of powders to the larynx, fauces, nose, and ear. This instrument could be used equally well by the surgeon or the patient himself.

Dr. W. H. KELSON: Microscopic slide showing Section of Cyst of Tonsil. The patient was a man, aged 43, sent up from the country with a diagnosis of sarcoma of the tonsil. He had suffered from repeated attacks of sore-throat, and the left tonsil had been slowly increasing in size for some months. He had slight pain and some difficulty in swallowing. The left tonsil was found to be very much enlarged, but no enlarged glands could be felt. The tonsil was partially enucleated and then the cold wire snare applied.

Dr. STCLAIR THOMSON: A case of Complete Stenosis of the Larynx from Epithelioma in a man aged 23. Hoarseness had come on suddenly while the patient was in India. When admitted to Netley Hospital in March, 1910, the whole larynx was enlarged, the left vocal cord was fixed in adduction, and the posterior half and left arytenoid were involved in the growth of an irregular tumour. No ulceration or enlarged glands. In May laryngo-fissure was performed, and the tumour, which had grown considerably, together with the left cord, removed. In October the patient was admitted to King's College Hospital wearing a small tracheotomy tube in the region of the cricothyroid membrane. There was stridor; the larynx was swollen and tender and its entrance occluded by the fixation of the arytenoids against the posterior surface of the epiglottis; later abscess in the neck and necrosed cartilage were removed. Wassermann and von Pirquet reaction were both negative. A section of the growth had been examined by pathologists, but opinions differed as to the presence or not of malignant disease.

Dr. H. W. FITZGERALD POWELL and Mr. G. W. BADGEROW: A female, aged 24, complaining of sore-throat of two weeks' duration, ulceration of right tonsil and pillars. Considered to be a case of Vincent's angina. Vincent's fusiform bacilli and the spirilla had been found on microscopic examination.

Dr. J. DUNDAS GRANT: 1. A case of Hypertrophy of the Lingual Tonsil in a singer. Partial removal by linguo-tonsil guillotine. 2. A case of Ulceration and Infiltration of Hard Palate, probably tuberculous, in a woman subject to tuberculosis of the larynx.

Dr. IRWIN MOORE: Case of Lupus of the Nose, Pharynx, and Larynx. The patient, a man aged 25, went to hospital complaining of stoppage of nose three or four years; no laryngeal symptoms. Von Pirquet reaction was positive.

Dr. G. C. CATHCART: A baby aged 11 months. One month previously had fallen forward on its nose. Shortly after this a swelling had been noticed at the root of the nose. It becomes blue and swells when the baby cries. Opinions were requested as to its nature.

MEDICAL SOCIETY OF LONDON.

Hodgkin's Disease.

A MEETING of this society was held on April 10th, Mr. CHARTERS J. SYMONDS being in the chair.

Dr. F. PARKES WEBER read a paper on a case of Late Hodgkin's Disease, with remarks on various cases presenting the clinical picture of splenic anæmia (Banti's disease). He said that in true Hodgkin's disease the lymphatic glands of some one region of the body were much more enlarged at first than the others, as if they constituted the primary focus or centre of the disease. Not rarely those on one side of the neck were chiefly affected at first; sometimes a group of retro-peritoneal glands seemed to be primarily involved; in a case which was under his care in 1903 the disease commenced in the mediastinum. He believed that the disease, when it was localised in the mediastinum, might give rise to a regular tumour-mass, not merely to a conglomeration of lymphatic glands. He quoted a case in which the superficial glands, which at first formed a prominent tumour on one side of the neck, shrivelled up during the course of the disease so as to become hardly noticeable. The disease superficially appeared to be in process of cure, but in reality the lymphatic glands in the thoracic and abdominal cavities and the lymphatic tissue of the spleen were becoming gravely affected. Probably in most cases a counter-infection of some kind took place at the end, and in his case the presence of streptococci in the perivascular lymph spaces of lymphatic glands afforded evidence of such a terminal infection. With regard to clinical diagnosis in the case referred to, the negative results of Wassermann's sero-reaction for syphilis and of von Pirquet's cuti-reaction for tuberculosis were of some value, and leukæmia was completely negatived by the blood picture. Hodgkin's disease might perhaps be simulated by malignant disease of the abdominal viscera (suprarenals) with secondary infiltration of lymphatic glands in the neck, but had there been any such abdominal malignant disease in the present case one would have expected enlargement of the inguinal as well as of the cervical glands to have ultimately occurred; moreover, the diminution and almost complete disappearance of the cervical swelling would hardly have been likely had it been due to carcinomatous infiltration. Wherever possible the diagnosis of Hodgkin's disease should be confirmed at an early stage by the excision and microscopical examination ("biopsy") of one of the enlarged lymph glands. Without the help of a "biopsy" it was by no means always so easy as some supposed to distinguish Hodgkin's disease from chronic tuberculous or syphilitic enlargement of lymph glands. Many persons were doubtless alive and well to-day who would have been long since dead had the diagnosis of Hodgkin's disease pronounced on them

been the correct one. Mistaken diagnoses in syphilitic and, especially, tuberculous cases doubtless accounted for many of the supposed cures of Hodgkin's disease. But that arsenical therapy (Fowler's solution, arsacetin, &c.) and the application of Roentgen rays could be of real use in many genuine cases of Hodgkin's disease there could scarcely be a doubt, even if a permanent cure could not be effected; that consideration made it very important that the diagnosis should be made as certain as possible, not only by the help of a "biopsy" (mistakes in diagnosis in regard to the question of Hodgkin's disease had, however, sometimes, it must be admitted, been made, even after a "biopsy" examination), but also by all other available methods, so that arsenical medication might be carefully and methodically pushed and X rays perhaps also utilised. A point of extreme clinical interest in the case he had brought forward was the development of splenic enlargement and ascites, which, together with the subsidence and practical disappearance of the superficial lymphatic glandular tumours and the association of marked leucopenia with the anæmia, produced the clinical picture of Banti's disease (the stage of splenic anæmia characterised by hepatic cirrhosis and ascites). So great, indeed, was the clinical resemblance that the diagnosis of Banti's disease was actually arrived at by medical men who had not had an opportunity of seeing the case of Dr. Parkes Weber at an earlier period when the superficial glandular swelling in the neck was the most marked feature. The leucopenia might have been a result of the fibrotic and necrotic changes which involved so large a proportion of the lymphadenoid apparatus of the body. Granting that there was a definite disease which might be termed splenic anæmia (or, in its later stages, "Banti's disease), Dr. Parkes Weber concluded by considering a few of the conditions which might clinically simulate it. Hodgkin's disease, or lymphadenoma "with splenic predominance"—that is to say, a kind of "splenic type" of Hodgkin's disease—had been likewise called the Griesinger (or lymphadenomatous) type of splenic anæmia, but Griesinger's original case was apparently not a certain one. At the necropsy the lymphatic glands of the mesentery and retroperitoneal region were found enlarged, and Cohnheim, who examined the spleen microscopically, reported that it showed only hyperplasia of its normal constituents. There was a kind of fibrosis in the liver and kidneys. Griesinger's case could not, therefore, with certainty be claimed as one of Hodgkin's disease in the modern sense of the term. Leucopenia occurred in various conditions other than splenic anæmia, conditions in which the spleen was chronically enlarged and had undergone extensive fibrotic or necrotic changes, and in which probably a great portion of the total lymphadenoid apparatus of the body was involved. Leucopenia might occur in chronic malarial and syphilitic disease of the spleen and liver. Dr. Parkes Weber quoted a very interesting case of chronic malignant endocarditis simulating splenic anæmia which came under his notice in 1909. In quite a considerable number of cases presenting during life the clinical features of splenic anæmia, old thrombotic obstruction of the splenic and portal veins (with sometimes more extensive recent thrombosis as well) had been discovered after death. Cases of biliary cirrhosis of the liver with splenomegaly were (owing to the chronic jaundice) seldom likely to be diagnosed as cases of splenic anæmia.

Dr. F. S. PALMER read a paper on Traumatic Neuroses and Psychoses and their Medico-legal Considerations.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

Cubicle Isolation.

A MEETING of this society was held on April 7th, Dr. W. G. WILLOUGHBY, the President, being in the chair.

Dr. F. FOORD CAIGER read a paper on Cubicle Isolation, its Value and Limitations, in which he said that the object of cubicle isolation was to provide the isolation required for cases of infectious disease at a lessened cost in buildings and staff in comparison with the outlay necessitated by the usual system in which each patient or small groups of patients were treated in a separate room. He pointed out that a ward fitted with cubicles in which the patients were separated merely by partitions of a moderate height should not be confused with one in which the partitions were carried right up to the ceiling level, as in the Institut Pasteur in Paris or in the Walthamstow isolation hospital. In these the wards were divided up into a series of self-contained chambers, each of which had to be separately ventilated, and required a larger floor area than was the case with cubicles where the ward was ventilated as a whole and where it was permissible to include the central corridor in reckoning the amount of floor space per bed. At the South-Western Fever Hospital two wards, 100 ft. long and 28 ft. broad, each of which had previously contained 18 beds, were divided by glass partitions, reaching to a height of 7 ft. above the floor level, into 16 cubicles. The air-space per bed was 2450 c. ft. and the floor space 175 sq. ft., of which 120 sq. ft. were enclosed within the cubicle. A central passage 5 ft. wide ran the whole length of the ward, into which the cubicle doors, 3 ft. 6 in. in height, opened. The doorways were not placed immediately opposite to each other, but on the "hit and miss" principle. Each cubicle had a separate window, provided with a winged fanlight for ventilating purposes. A lavatory basin was fixed in each cubicle. The principle on which the cubicles were administered was aseptic in its conception, and every effort was made to reduce to a minimum the chance of mediate infection through the agency of the attendants, or of any articles used in common by the patients. With this object in view each cubicle was supplied with separate towels, brushes, spatulas, thermometers, &c. After use these were sterilised. Inside each cubicle was an overall for the nurse and one for the medical officer, who washed their hands immediately before leaving the cubicle. After giving in some detail the results of four years' observation, Dr. Caiger expressed the opinion that cubicles as opposed to self-contained rooms were unsuited to the treatment of small-pox, chicken-pox, and measles during the acute stage of the illness, and that there was apparently some risk in the case of septic scarlet fever. He considered, however, that scarlet fever, if not of a septic type, diphtheria, measles in the post-eruptive stage, rubella, whooping-cough, mumps, influenza, enteric and probably typhus fever, could be treated without much fear of accident.

Mr. H. E. ARMSTRONG considered it was imprudent to put patients suffering from different diseases in the same ward, and did not think that the advantages claimed for the cubicle system had been made out by Dr. Caiger. He referred especially to the considerable possibility of spreading infection by flies in septic cases of scarlet fever and in measles.

Dr. A. H. BYGOTT agreed that the advantages of cubicles had yet to be demonstrated.

Dr. H. MEREDITH RICHARDS considered that the cubicle system was useful under certain limited conditions. He thought that wards containing 14 or 16 beds were too large and that they should be divided into smaller units. The success of isolation depended partly on the quality of the nursing and partly on the septic property of the disease isolated.

Dr. C. SANDERS said that the ideal system of isolation would be the provision of a separate room for each patient. The barrier system, as practised at the West Ham Hospital, was not proposed as the best system, but its value was especially evident in a ward devoted to cases of the same disease, for it prevented a simple case becoming serious.

Dr. H. FRANKLIN PARSONS referred to the fact that 40 years ago the suggestion was made that patients should be kept in rooms divided by glass partitions for the prevention of surgical complications, but with the advent of Listerism the need for this isolation passed away. In 1892 the Plymouth corporation proposed to build separate rooms at its isolation hospital, but the proposal was not approved by the Local Government Board for certain sufficient reasons. He considered that the Stockwell cubicles had great advantages in nursing and would be especially useful in diseases of a short striking distance.

Dr. S. C. LAWRENCE, referring to the Walthamstow isolation hospital, said that patients in that institution who showed signs of rhinnorhœa were put in the separate rooms much to their own benefit.

Mr. F. E. FREMANTLE suggested that the beds in a ward might be surrounded by glass screens and arranged so that the patients faced the light.

Dr. W. BUTLER said that the cubicle system had been introduced because the ordinary isolation wards had not only

failed in preventing the patients from contracting other diseases than those for which they were admitted, but also appeared to prolong the period of infection. He considered that an isolation hospital should confer complete isolation.

Dr. J. E. SANDILANDS spoke of the difficulties attending the adoption of the cubicle system in rural districts where temporary nurses were so frequently employed.

Dr. T. STRAIN, as the result of experience gained at the Barnes isolation hospital, considered that the aseptic treatment of infectious cases need not cost more than the non-aseptic.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases.

A CLINICAL meeting of this society was held on April 7th, Dr. A. CHRISTY WILSON, the President, being in the chair.

Mr. H. LITTLEWOOD showed: 1. A patient who had been operated on for Malignant Disease (Adeno-carcinoma) of the Common Bile-duct involving the cystic duct. He was 65 years of age and had had intense jaundice for six weeks previous to the operation, with great loss of weight. Operation: March 25th, 1910. Removal of part of the common duct, cystic duct, and gall-bladder; the lower end of the cystic duct was ligatured, and the common hepatic duct was implanted into the upper surface of the first part of the duodenum. The patient made a good recovery; the jaundice rapidly cleared up. He was now apparently quite well and had gained 3 st. in weight. 2. A patient, aged 33 years, with Malignant Disease of the Sigmoid Flexure involving the small intestine and bladder, with a fistulous opening between the bladder and colon. Illness commenced in February, 1909. He was treated for a long time as a case of mucous colitis. Mr. Littlewood saw him first on August 20th, 1910; he was then very emaciated and for five weeks had been passing fæces and flatus per urethram. He had a very foul cystitis. Operation: August 25th, 1910; removal of portion of the colon and small intestine with end-to-end union; the growth from the bladder wall was excised, and the vesical opening closed with a continuous catgut suture. He made a good recovery and was now apparently quite well, and had gained 2 st. in weight.

Mr. LITTLEWOOD also showed a patient, aged 35 years, from whom he removed a Popliteal Aneurysm on Oct. 10th, 1910. The patient made a good recovery.

Dr. T. WARDROP GRIFFITH showed a case of Raynaud's Disease which had been under his continuous observation for 22 years and was first shown at a meeting of the society some 20 years ago. The ordinary phenomena of local syncope and local asphyxia had come on 27 years ago at about the age of puberty, the patient being now 41. At an early stage the sclerodermic changes found in many cases of Raynaud's disease became very marked, and to these was added a shortening of the tendons of the forearm and of the palmar fascia. For many years the fingers had been seen to be getting shorter, and this was due not to gross loss of tissue from gangrene but to an interstitial absorption of their tissues which affected the bones as well as the soft parts. On radiographic examination it was seen in the case of several of the fingers that the distal phalanx had completely disappeared, and in the case of some that even the second phalanx was reduced to very small proportions.

Dr. A. G. BARRS and Mr. J. F. DOBSON showed a woman, aged 37, in whom Partial Gastrectomy for Chronic Gastric Ulcer had been performed. Eighteen months previously she had been admitted for a mass in the epigastrium; a diagnosis of inoperable carcinoma ventriculi was made. She attended as an out-patient, was treated with morphia suppositories, but did not lose weight. She was readmitted on Feb. 3rd, 1911, when a large mass could be felt in the epigastrium, and radioscopy showed an hour-glass constriction of the stomach at the site of the mass. Chronic ulcer was now diagnosed and Mr. Dobson operated. A large ulcer was found adherent to, and infiltrating, the anterior abdominal wall; it was also adherent to the liver and pancreas. Partial gastrectomy was performed. Two days after the operation there was a discharge of pancreatic fluid. A slight discharge was still present. The patient's general condition was greatly improved.

Dr. R. G. M. LADELL showed a case of Advanced Rheumatoid Arthritis treated by 90 injections of fibrolysin and by massage. For 14 years the patient had been a helpless cripple, but she could now move about the house and walk up and downstairs unaided.

Dr. W. H. MAXWELL TELLING showed a case of Extensive Gummatous Dermatitis of 9 years' duration treated by intramuscular injection of salvarsan (0·6 gramme). The case had been refractory to the ordinary methods of treatment. Injection was given on Feb. 19th, after the patient had been previously shown to the society. Now almost all infiltration had disappeared and the condition was apparently still improving.

Mr. R. LAWFORD KNAGGS and Mr. H. BAILEY showed a patient in whom a Tuberculous Cæcum had been excised four years ago. The patient was 34 years of age, and for six months before her admission in 1907 had had abdominal pains, with irregularities of the bowels. A more acute attack led to the discovery of a moveable mass in the right iliac fossa. On admission, on Nov. 21st, 1907, in addition to a mass as big as a hen's egg, there was evidence of a coil close to it which filled up and emptied with a gurgle. She had lost some weight, but in all other respects was healthy. At the operation on Nov. 27th the cæcum, vermiform appendix, and termination of ileum were found the subject of tubercle, and forming a thickened mass. There were tubercles on the peritoneal surface. The cæcum, ascending colon, and 6 in. of ileum were excised with the affected chain of ileo-colic glands. The ends were closed, and a lateral anastomosis made. Some distance up the small intestine two isolated groups of tubercles were found, and the intestine at these points was thickened and narrowed. There was a distance of 2 or 3 ft. between the two points. They were not dealt with. Result: good recovery; good health since; no intestinal symptoms at all.

Mr. DOBSON showed a case of Excision of a Tuberculous Cæcum. The patient, aged 27, was a jockey and had wasted a great deal. Two years ago he commenced with enlargement of the glands in the neck. Abscesses formed, and he had several operations. During the last year he had had attacks of abdominal pain with distension of the abdomen and vomiting. A tumour had been noticed in the right iliac fossa for some months. The tumour was found to be situated in the cæcum. The cæcum and appendix with the ascending colon, part of the transverse colon, and about 8 in. of the ileum were excised together with the ileo-colic chain of glands. Lateral anastomosis between the ileum and transverse colon was performed.

Mr. DOBSON and Mr. S. W. DAW showed a case of Extensive Disease of the Glands of the Neck under treatment with Coley's Fluid for 18 months. The patient, a woman, first attended the infirmary 18 months ago, suffering from enlargement of the glands of the neck. On both sides of the neck were large and very hard masses of glands, which were apparently malignant. No primary growth was detected nor was any microscopical examination made. She was suffering a great deal of pain, for which she was taking large doses of nepenthe, and had lost both weight and strength. She had been under treatment with Coley's fluid ever since. Many of the glands had broken down and discharged for a little time. She still attended for the injections occasionally, as she complained of pain in the neck when they were discontinued.

Mr. H. COLLINSON showed a patient in whom he had removed a Calculous Cast of the Ureter. The patient, a woman aged 26, had many years' history of pain in the region of the left kidney and ureter, with occasional hæmaturia. A hard mass was palpable in the position of the left ureter; per rectum the apex of a large calculus could be felt in the position of the lower end of the ureter. Skiagram showed a calculous mass occupying the whole length of the ureter from kidney to bladder. Cystoscopy demonstrated that the right kidney was secreting normally; a little blood but no urine was issuing from the left ureteral orifice. At the operation on March 18th a lumbar incision was made, the kidney found to be hydronephrotic, and the ureter was explored retroperitoneally to below the brim of the pelvis. Nephrectomy and ureterectomy were performed. The calculus was 8 in. long and from ½ to 1 in. thick, and its lower end hooked over the brim of the pelvis.

Dr. BEDFORD PIERCE showed a case of (?) General Paralysis from Congenital Lues. The patient had been

married some years; no children. For the last 12 months there had been failure of memory, he became dull and inattentive, and could not be trusted in business. He was an eight months' child, said to have been born with closed fontanelles; teeth peculiarly worn. Had a speckled cataract, also marked divergence, and unequal pupils. He presented symptoms of early tabes. The question was whether it was a case of early general paralysis of the insane dependent upon congenital lues.

Mr. A. D. SHARP showed a case of Gummatous Antrum of Highmore. The patient, aged 28, complained of right nasal discharge, headache, swelling of right cheek, and discolouration around the eye; was rapidly improving under potassium iodide.

Mr. MICHAEL A. TEALE showed a case in which an Artificial Pupil was produced by punch-forceps. The patient, a girl, aged 13, five years ago sustained a wound of the right eye by the prong of a fork, which perforated the cornea and lens. Severe irido-cyclitis followed, in the course of which the lens had to be extracted by suction. The inflammation gradually subsided, but the pupil was occluded by a thick mass composed of iris and inflammatory material. There was perception of light only. On Jan. 10th of this year a central portion of the obstruction was removed by punch-forceps under a general anæsthetic. With 16·0 diopter lens the patient now read Jaeger 4 with this eye.

Dr. E. F. TREVELYAN showed an unusual case of Muscular Atrophy. The patient, who is 30 years of age, had a fall on the shoulder in March, 1910, from which he dated his illness. There was considerable paratysis and wasting of the shoulder girdle muscles. The serratus magnus was unaffected. There was weakness of the muscles about the elbow and the wrist joints, paresis of the interosseous and thumb muscles, and marked fibrillary twitchings.

Mr. J. A. COUPLAND and Mr. TEALE showed a case of Hunterian Chancre of the Left Lower Eyelid in a man which had been treated four days previously with an intramuscular injection of 0·6 gramme of salvarsan. Mr. Coupland, in discussing the use of salvarsan, gave his opinion that the sequelæ of local pain, painful induration, and abscess formation were real disadvantages in the treatment by intramuscular injection. He referred to a case of a woman suffering from secondary syphilis, who was six months pregnant, in whom 0·6 gramme of a neutral emulsion of salvarsan had been given intravenously. The patient became profoundly collapsed before the injection was completed, vomiting and diarrhœa followed, with a rapid, irregular, weak cardiac action; the patient aborted five hours later. For 12 hours after the injection her condition was critical, but she eventually made a good recovery, with rapid disappearance of her syphilitic manifestations.

Cases were also shown by Dr. T. CHURTON, Mr. DAW, Dr. A. BRONNER, Mr. H. SECKER WALKER, Mr. G. CONSTABLE HAYES, and Dr. A. L. WHITEHEAD.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Malignant Ovaries.—Natural Delivery after Cæsarean Section.—Two Cases of Clinical Interest.

A MEETING of this section was held on March 24th, Dr. H. JELLETT, the President, being in the chair.

Dr. E. H. TWEEDY showed Malignant Ovaries which developed in an elderly unmarried woman. Her symptoms were those of hysteria. Operation was considered inadvisable. On examination Dr. Tweedy found the woman suffering from constipation, weakness, and loss of flesh. The tumour was very palpable, hard, and nodular, like a myoma, but as it was doing the patient harm, and had been noticed only within the last six months, he considered it a malignant tumour. On opening the abdomen he found two tumours, having the appearance of primary carcinoma, one on either side of the uterus; the latter was small and adherent. One tumour, lying almost detached and fixed in Douglas's cul-de-sac in close communication with the ovary, seemed to have been detached from the ovarian tumour and had extensive adhesions to the rectum. He removed it in its entirety, together with 2 inches of the upper portion of the rectum. Having closed the rectal incisions he found the patient had scybalous masses in the bowel. His house surgeon in removing these masses perforated the rectum, an accident much commoner than was supposed. The bowel was stitched up 1½ inches from the anus, iodoform gauze was packed around the infected area, and a tube inserted to encourage discharge, which was copious for two or three days. She did well, and he did not like to remove the plug but kept it in for seven days and fed her on albumin water, 1½ pints daily, and at the end of five days added half a pint of whey. On the day after taking out the plug a fæcal fistula formed. The bowels were then opened. The fæcal fistula had now nearly dried up, and her temperature and pulse were normal.—Sir WILLIAM SMYLY said that some years ago he was called in consultation to a woman in whom a medical man had tried to separate adhesions by Schultz's method. Two fingers went through the rectum and the woman died from peritonitis. At that time gloves were not in vogue. He (the speaker) thought gloved fingers were much more unlikely to go through the bowel. In a tuberculous rectum the fingers would go through with great ease.—Dr. W. M. CROFTON said that the tumour was of a very malignant nature, the cells were in a tremendously active state of division, and heteromitoses were very well marked.—Dr. TWEEDY said, in reply to the President, that if the gauze was taken out within 24 hours or 48 hours great difficulty would be found in its removal. After four or five days it was an easy matter to pull it out, for in many cases adhesions only formed around the gauze at the end of three days or longer.

Dr. B. A. H. SOLOMONS read a note on a case of Natural Delivery following Cæsarean Section, in which he commented on the dread which beset most obstetricians of allowing a woman with a cicatrix in her uterus to deliver herself. The baby born by Cæsarean section weighed 7 lb., the one born naturally 6½ lb. The true conjugate after measuring at the birth of the first two babies was 7 cm. Transverse diameter of inlet 10 cm.; at the birth of the third the conjugata vera was 8 cm., transverse 12·5 cm. Myomectomy was cited as an instance of the safety of allowing a woman with a uterine cicatrix to deliver herself. Sterilisation of the patient should never be performed.—Dr. A. N. HOLMES said there must have been some disparity in the measurements. He thought the size of the child's head must be taken into consideration.—Dr. TWEEDY said he did not think the pelvis had enlarged between the two births. The pelvis must have been wrongly measured the first time, as it was easy for those without much practice to go wrong in the use of Skutch's pelvimeter.—Dr. GIBBON FITZGIBBON asked, considering the child was 6½ lb., if there was any indication of its being premature. The fact of this woman having delivered herself naturally was not a point against sterilisation.—The PRESIDENT said he did not see why the uterus should rupture during labour if it was adherent to the back of the abdominal scar. If the uterine scar ruptured during labour it would be immediately diagnosed, and would not be a serious matter. In regard to sterilisation, one must take into consideration the number of children the patient had.—Dr. SOLOMONS did not think the pelvis was wrongly measured, for the measurements carried out in the Rotunda and Holles Street Hospitals were found to correspond. The appearance of the child and the history showed that she was up to her full term. He did not see why a uterine scar should prevent a patient continuing her labour. Karl Hartmann's statistics showed that there was less danger in performing subsequent Cæsarean section than in doing it the first time, which seemed a strong argument against sterilising the patient.

The PRESIDENT read notes of two cases, one of Perforative Appendicitis complicating Pregnancy and Labour; the second one of Eclampsia in which death occurred from rupture of an abdominal vein.—Dr. TWEEDY, Dr. CROFTON, Dr. R. J. ROWLETTE, and Sir WILLIAM SMYLY discussed the cases, and the PRESIDENT replied.

SECTION OF PATHOLOGY.

Splenic Anæmia.—Exhibition of Cases and Specimens.

A MEETING of this section was held on March 31st, Mr. A. H BENSON, the President, being in the chair.

Dr. F. C. PURSER and Dr. H. C. EARL gave an account of a man, aged 34, married, with three healthy children, who had been under the care of Dr. J. F. O'Carroll in the Whitworth Hospital suffering from the group of symptoms

described under the Splenic Anæmias. The enlarged spleen had been noted by the patient in January, 1910, after an attack of influenza. This and scarlet fever at an early age were the sum of previous illnesses. No venereal disease. Patient had never been out of Ireland. Father, three brothers, and two sisters alive and healthy. Mother died, aged 62; cause of death unknown. On admission to hospital on Nov. 16th the lower edge of the spleen could be felt an inch below the umbilicus. The liver was palpable, but not greatly enlarged; no jaundice, no ascites. Hæmorrhage from the rectum had been noted about ten times in eight months; no bleeding from other sources. A blood examination showed: red corpuscles, 2,480,000, no abnormality in size, shape, or staining; hæmoglobin, 55 per cent.; white corpuscles, only 2000 per c.mm. A differential count showed two mononuclear cells to each polynuclear cell. Shortly after admission (Nov. 30th) patient developed an ischio-rectal abscess, which discharged into the gut. The red corpuscles had now fallen to 1,264,000 per c.mm. and the hæmoglobin to 25 per cent.; the white corpuscles numbered 3600; differential count as before. On Jan. 5th, 1911, the patient was nearly cured of the abscess. The red corpuscles had risen to 2,930,000 and the white corpuscles to 4400 per c.mm.; polynuclear neutrophile, 24; polynuclear eosinophile, 2; transitional, 2; hyaline, 6; large lymphocytes, 30; small lymphocytes, 36; one normoblast was found. The patient vomited "coffee grounds" on Jan. 8th, and had a convulsive seizure on the 9th. The fit was more like a toxic than an apoplectic seizure. At no time was anything found wrong with the urine. The patient never recovered consciousness. He died on Jan. 11th. At the necropsy the spleen, which weighed 2380 gms., was found to be hard and firm, red in colour, with darker red blotches all over its cut surface. The capsule was thickened; no obvious fibrosis of organ to naked eye. Microscopically there was considerable fibrosis, with extensive disappearance of Malpighian bodies, and areas in pulp of red blood corpuscles closely packed. The liver, 2050 gms., looked fatty, and microscopically showed some little interlobular cirrhosis. A few vascular and rather fibrous lymphatic glands were found round the abdominal aorta and head of the pancreas. The heart was flabby and the auriculo-ventricular valves each admitted one finger more than usual. The lungs were very emphysematous. The brain, kidneys, and other viscera were normal.

Professor A. H. WHITE showed some of the organs and some stained specimens of the blood from a case of Pernicious Anæmia. The case was in every way a typical one, and the organs showed the characteristic fatty degeneration. The spleen was a little enlarged and somewhat indurated. In slices from the liver and the kidney the presence of hæmosiderin in exceptional amount was demonstrated by both the ferrocyanide and ammonium hydrosulphide methods. A point of interest in this case was clear evidence of healed tuberculosis, found in the apex of one lung and in the liver. Professor White pointed out that patients not uncommonly developed tuberculosis in the course of the disease.—Dr. W. BOXWELL said that this patient had been twice "cured" of her ailment by the administration of cacodylate of sodium. When first admitted to hospital, exactly a year before, she was almost *in extremis*. The red cells had fallen to 17 per cent. and the hæmoglobin to 20 per cent. The blood was full of nucleated red cells, and occasional myelocytes could be found. After a three months' course of arsenic she made an apparent and wonderful recovery. The red cells count rose to 60 per cent. and the nucleated cells disappeared. The poikilocytic character of the blood, however, persisted, and the index was always a little above one. Dr. T. G. MOORHEAD said that nucleated red cells were not the most important characteristic of the pernicious anæmia blood picture, but rather the poikilocytosis and the great variations in the size of the corpuscles.—Dr. BOXWELL said he always looked upon this very variation in size of otherwise well-shaped cells as the essential feature of pernicious poikilocytosis. Broken and distorted cells might be simulated by artefacts.—Dr. EARL also discussed the case and Professor WHITE replied.

Professor J. A. SCOTT, in demonstrating a remarkable case of Tuberculosis, said the man was in hospital for some time. He was known to have a large spleen and disease of the kidneys. The necropsy showed a large spleen weighing 4½ lb., and covered with whitish patches about ¼ in. in diameter. The liver was slightly pale and showed small light-coloured spots rather hard to see. The lungs were slightly pneumonic. The case subsequently proved to be a case of tuberculosis. The heart showed patches of fibrous tissue in the wall of the left ventricle. The aorta had a fibrous mass growing from the edge of a patch of atheroma. The microscopical examination of the liver proved the nature of the disease. The small spots were minute miliary tubercles, showing granuloma and giant cells. The spleen showed granuloma and giant cells, but much more fibrous tissue and caseation. The lungs showed tubercular patches and catarrhal pneumonia. The kidneys contained similar miliary tubercles. The disease appeared to have commenced in the spleen, from which it was diffused through the whole body.—Dr. L. G. GUNN and Dr. MOORHEAD discussed the case.

Dr. W. G. HARVEY showed the Brain from a girl, aged 13, who had always been strong and healthy. Her sister had died from a sudden stroke when she was young. One day the mother noticed that she could not raise her right arm or leg, and the right side of the face was paralysed. The following day she died. The interest of the case lay (1) in hæmorrhage of the brain not due to tumour occurring in so young a child; and (2) in the history of a similar "stroke" in a young sister. Dr. Harvey's second case was that of a child, aged 8, who on the day that she died went to bed apparently quite well. Her father noticing that she was breathing curiously in her sleep tried to awaken her, but failing brought her to hospital, where she was found to be dead. On post-mortem examination large quantities of fluid were found in the pleural and pericardial cavities. The lungs on section showed some bronchitis. A few adhesions were present on both sides and some miliary tubercles. There was no pericarditis, but very extensive pale degeneration of almost the entire heart muscle, showing on section the typical appearances of tuberculosis. The valves were normal. Such extensive tuberculosis of the heart muscle was very uncommon.

Dr. ROBERT J. ROWLETTE showed a specimen of Aneurysm of the Aorta perforating the Œsophagus.

Dr. BOXWELL showed the Heart and part of the Aorta taken from a case of sudden death.

Dr. T. T. O'FARRELL showed a Microscopic Preparation of a Bronchial Cast. It was seen to be packed with Charcot Leyden crystals.

CLINICAL SOCIETY OF MANCHESTER.—A clinical meeting of this society was held at the Children's Hospital, Gartside-street, Manchester, on April 4th, Mr. J. Howson Ray, the President, being in the chair.—Dr. J. Stavely Dick showed a series of cases with Tuberculous Affections which were undergoing treatment—under opsonic control—with tuberculin (T.R.) inoculations. Two were cases of pulmonary tuberculosis, which had been under treatment for three and five months respectively. In both the inoculations had definitely controlled the temperature, while the one under observation for three months declared herself to be very much better. The opsonic index of the other had risen from 0·5 to between 1·1 and 1·2, and the patient expressed himself as feeling much better and being possessed of a very much improved appetite. Two others were subjects of tubercle of bone. In one of these—a boy aged 2 years—some difficulty was experienced in arriving at a satisfactory dose. The initial dose given was 1/30000 mg., and at present he was having 1/25000 mg. In this case the improvement so far had been very small. He came under observation in November, 1910. The other bone case—one of tuberculosis of the hip—was that of a man 44 years of age. When the inoculations were started he had three discharging sinuses, and was confined to bed with considerable œdema of both legs. The inoculations had been carried out for 11 months, the present dose being 1/3000 mg. His condition was much improved. Another case was one of tuberculous adenitis whose index had risen under treatment from 0·8 to 1·3. In this case there was marked improvement in the anæmia. No iron had been administered. She was started with 1/20000 and was at present getting 1/7000 mg. One of the glands had broken down, and though the aspirated pus had proved sterile she had been given doses of 100 to 500 millions of the staphylococcal vaccine. Another case, in which it was difficult to estimate the amount of good done by the inoculations, was one of

tuberculous peritonitis on whom laparotomy had been done in January. Dr. Dick was of opinion that the very rapid improvement in the boy's condition was to be attributed very largely to the inoculations. The dose he was getting was 1/5000 mg. Another case was that of a boy 5 years of age, who was very easily fatigued, fretful, anæmic, and occasionally had febrile attacks. No localising signs could be found. His brother had died from tuberculous meningitis and had suffered from a tuberculous hip. Previously to treatment his opsonic index was 0·74. On March 18th he was given 1/10000 mg., and on the 25th his index had risen to 1·56. Dr. Dick expressed the opinion that easily tired children, either with or without obvious enlargement of glands, whose opsonic index was well below the normal, were greatly benefited by tuberculin, especially if there was a family history of tubercle.—Dr. C. C. Heywood showed a case of Disseminated Sclerosis of three years' standing in whom slow improvement was being got by the administration of "lymphoid" capsules; and another case where it was difficult to come to a satisfactory diagnosis. The latter child had suffered from headaches for three months, a little vomiting, and intense optic neuritis which had gone on to optic atrophy. For the last month the muscles of the right eye had been affected. The child was now very well and complained of no pain. The diagnosis was that of some local tuberculous involvement of the base of the skull.—Dr. G. H. Lancashire showed two cases of Lupus treated, with very good results, with Morrow's ointment; an interesting case of very extensive Staphylococcic Dermatitis involving the whole of the head and neck, where most rapid improvement had followed the injection of the staphylococcic vaccine; and also two cases illustrating Syphilitic Skin Affections.—Dr. H. H. McNabb showed several cases with the typical signs of optic atrophy, of phlyctenular ulceration of the cornea, and of trachoma.—Dr. R. W. Marsden showed a man in whom all the signs and symptoms of chronic and long-standing Nephritis were present, but who had had no symptoms of any kind for more than three weeks.—Dr. C. H. Melland showed a youth in whom there was Stenosis of the Pulmonary Valve as a result of an attack of rheumatic fever some years ago.—Mr. J. A. K. Renshaw showed a case of Lupus of the Nasopharynx and another of Tuberculosis of the Larynx with extensive Hyperplasia.—Dr. D. L. Sewell demonstrated the use and advantage of the Kuhn's Per-oral Intubation Apparatus.

LIVERPOOL MEDICAL INSTITUTION.—A pathological meeting of this institution was held on April 6th, Dr. T. R. Bradshaw, the President, being in the chair.—Dr. G. Stopford Taylor and Dr. R. W. Mackenna exhibited Skin from a case of Darier's Disease.—Mr. G. P. Newbolt and Dr. D. Moore Alexander exhibited: 1. A Carcinoma from the Head of the Pancreas of a woman aged 58. During life the tumour simulated a growth of the right kidney; there was no jaundice. 2. A Hypernephroma of the Right Kidney removed by operation from a woman, aged 64; hæmaturia occurred.—Mr. D. Douglas Crawford showed: 1. Specimens of Hæmangioma of the Upper Jaw from two girls which clinically resembled ordinary epulis; in one case recurrence had occurred. 2. Spinal Cord from a man, aged 23, who died 30 hours after a severe blow on the back of the neck, with complete loss of sensation of all the limbs and a temperature of 105° F. There was no fracture of the vertebræ, but subdural hæmorrhage and complete severance of the cord were present.—Dr. N. P. Marsh and Mr. R. C. Dun showed a Sarcoma of the Cerebellum; Mr. F. C. Larkin and Dr. P. Hick a Gumma of the Gall-bladder; and Mr. Arthur J. Evans and Dr. Hick, Lungs from a case of Pulmonary Embolism or Thrombosis in a woman who died 18 days after laparotomy.—Mr. Robert E. Kelly and Dr. Ernest Glynn showed a Thrombosis of the Mesenteric Artery of unknown cause from a man, aged 34 years, in whom the intestine was purple and moderately distended.—Dr. T. Bushby and Dr. Glynn exhibited a Hypernephroma of the Kidney with Metastases in the Heart, Lungs, and Skin; the growth was unusually vascular; Dr. Glynn a case of Tuberculous Meningitis in a child, in which the base of the brain was normal; and Dr. W. B. Warrington sections of the Cord from a man with symptoms of Tabes due to extensive syphilitic meningitis of the cervical and lumbar regions.—Dr. J. Wiglesworth showed: 1. A Brain from a microcephalic epileptic imbecile, weighing only 600 grammes, and simply convoluted; microscopically the nerve cells were abnormal. 2. A Brain from a macrocephalic idiot, weighing 1775 grammes, highly but abnormally convoluted. Microscopically the neuroglia was hyperplasic. 3. A Brain from a macrocephalic epileptic, weighing 2130 grammes, highly and normally convoluted; microscopically almost normal. 4. A Cerebral Aneurysm of the size of a walnut.—Mr. G. C. E. Simpson read a note on a case of Nephrolithiasis in a boy, aged 8, from whose kidneys numerous stones were removed. Recovery was complete. Practically all the calculi had been previously demonstrated by X ray photographs.—Dr. Glynn compared the microscopical appearances of a case of Suprarenal Tumour with those of the ordinary renal hypernephroma; they were quite different. He believed that renal hypernephromata were not derived from suprarenal rests.—Dr. O. T. Williams read a paper on Intestinal Toxæmia.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on April 5th, Mr. A. Fulton, Vice-President, being in the chair.—Mr. F. C. Porter, in introducing a discussion on Oral Sepsis, said that a clean mouth was now held to be the chief essential in preventing dental caries. Teeth were always attacked from the outside. Lactic acid produced by the influence of bacteria destroyed the enamel. Another group of bacteria brought about liquefaction of the dentine. It was clearly established that a cleansed tooth did not decay; also that teeth in a well-formed mouth were less liable to decay; and that it was essential to introduce cleanliness of the mouth into the daily routine of a child's life. Adenoids, mouth-breathing, "dummies," and sucking thumbs led to ill-formed teeth, and so to caries. The child should be taught to masticate and not to bolt its food, and to drink at the end of a meal. The food should be dry. In alveolar abscess the toxic production of a dead pulp was the cause of the trouble. The chief causes of pyorrhœa alveolaris were the inclusion of salivary calculi between the gum and the teeth, the lodgment there of particles of decomposing food, the overhanging of crowns, or any illness lowering the vitality of the patient, to whom soft food was given. The treatment consisted of disinfectants, astringents, and massage of the gums. Breast-fed babies were less liable to have caries. Routine cleansing of the mouth should be commenced as soon as the first teeth appeared in the baby. The teeth should be brushed at night and the movements of the brush should be vertical. No sweets should be given at night after the teeth had been cleansed. Finally, as bacteria and ferments were always present in the mouth and could not be eradicated, the teeth should be carefully overhauled three times a year.—Mr. A. Stanley Green (Lincoln) thought it essential that there should be thorough examination of the teeth at all schools. Among the chief causes of dental caries were white bread, mouth-breathing, insufficient exercise of the teeth in children, and the modern rush of school life, which tended towards the bolting of food. He agreed that breast-fed babies had less caries. All septic teeth should be removed. Among the sequelæ of dental caries he mentioned epithelioma, gastric and duodenal ulcer, anæmia, earache, stomatitis, alveolar abscess, and death.—Mr. A. E. Rowlett, L.D.S. (Leicester) described the teaching of Dr. J. Sim Wallace. For the prevention of dental caries it was necessary thoroughly to masticate the food, the food being such as required mastication; the teeth should be cleaned after every meal. Diet was important and should be begun at the sixth month of life; the food should be fibrous and dry rather than sloppy, and the meal should be ended with a drink of milk to wash away débris.—The discussion was continued by, among others, Dr. J. S. Bolton, Dr. J. A. Waring, Mr. A. M. Webber, Mr. R. G. Hogarth, and Mr. Fulton.

BATH CLINICAL SOCIETY.—A meeting of this society was held on April 7th, Mr. F. Lace, the President, being in the chair.—The following were among the exhibits:—Dr. C. J. Whitby: A case of a boy, aged 9, suffering from a Cerebral Tumour, characterised by paroxysmal attacks of headache followed by vomiting, marked double papilloedema, and a tendency to walk to the right. The tongue when protruded deviated slightly to the right side. The knee-jerks were increased, especially the right, which showed a tendency to clonus. Concentric diminution of the

colour field of vision for blue was present on both sides, but was more marked on the left. Von Pirquet's tuberculin cutireaction had proved negative.—Dr. Rupert Waterhouse: (1) A girl, aged 26, with Congenital Anonychia of the Fingers—the thumbs were not affected; (2) specimens of Cystic Kidneys; and (3) specimens from cases of Osteitis Deformans. —Mr. Forbes Fraser: A girl suffering from an Enchondroma of the Lower End of the Femur.—Mr. A. de V. Blathwayt: A Sarcomatous Tumour, weighing 70 oz., of the Gastro-Hepatic Omentum removed from a woman, aged 37, which had invaded the stomach wall. There were secondary deposits in the liver, which weighed 116 oz.—Mr. T. Pagan Lowe: An X ray photograph of Progressive Unilateral Osteitis Deformans of the Right Tibia in a patient aged 60.—Dr. G. H.-H. Almond read a paper on Cerebral Œdema and Epileptiform Convulsions. He related a case of a woman, aged 35, having a family diathesis of functional instability, herself suffering from fainting attacks and hysterical manifestations. Later her fits more closely resembled true epilepsy. Following a fall she had recurring epileptiform convulsions, bilateral at first, but after a time confined to the left side of the body and finally to the left side of the face only. Her pupils became pin-point, her pulse thin and rapid, and breathing of the Cheyne-Stokes variety. She died 18 hours after the fall, having had over 100 fits. Post mortem, the coverings of the brain, which was opened first, were found to be intensely œdematous and from 3 to 5 oz. of free fluid were computed to have escaped. The sinuses were bloodless. No macroscopic lesion was found. There was old tuberculous disease of the right apex and pleura. Having briefly described the cerebral circulation, its arterial and venous pulsations, the indirect importance of the vaso-motor system, acting chiefly through the splanchnic vessels, the formation of lymph as a true secretion of the choroid and the occurrence also of exudation and absorption, and the non-occurrence of filtration, he said sudden failure of the cerebral circulation frequently produced epileptiform convulsions. This was probably not due to the want of oxygen so much as to the fact that enfeebled circulation allowed accumulation of metabolites to occur in the tissues and there increase the excitability of the cerebral cortex. In the treatment of status drugs often proved futile; lumbar puncture should not be delayed This might, however, fail, especially if the base of the brain was firmly wedged into the os magnum. Trephining, or better still fenestration, should then be resorted to.

MEDICO-PSYCHOLOGICAL ASSOCIATION.—The spring meeting of the South-Eastern Division of this association will take place on April 25th at the Bethlem Royal Hospital, S.E., by the courtesy of Dr. W. H B. Stoddart, when the following papers will be read: The Story of Bedlam (1247 to 1911), by the Rev. E. G. O'Donoghue; Witchcraft and Demoniacal Possession, by Dr. H. J Norman; and Some Instances of Sudden Death with Post-mortem Findings, by Dr. J. Francis Dixon. In the evening of the same day the members of the association will dine at the Café Monico. All communications should be addressed to Dr. Stoddart, Bethlem Royal Hospital, London, S.E.

THE BRITISH MEDICAL BENEVOLENT FUND AND GUILD.—A grand evening concert in aid of this fund and guild will be given on Saturday, April 29th, at 8 15 P.M., in Bechstein Hall, London. The concert is under Royal and distinguished patronage. The long list of patrons is headed by H.R.H. the Princess Christian of Schleswig-Holstein and Their Serene Highnesses the Duke and Duchess of Teck. The following artistes have kindly consented to give their services: Madame Donalda (soprano), Miss Aimée Parkerson (contralto), Mr. Lawrence Kellie (tenor), Mr. E. Gordon Cleather (baritone), Mr. Maurice Farkoa, Miss Lilian Wilkins (solo viola), Miss Jacoba Wolters (solo harpist), Mrs. Kendal (recitation), and the Hamilton Harty Quartet. The accompanist is Mr. Hamilton Harty. Tickets at the price of £1 1s., 10s. 6d., and 7s. 6d. each for the stalls and at 3s. each for the balcony (unreserved), may be obtained at the Bechstein Hall, at the usual ticket agencies, and from the following members of the committee: Lady Critchett, 21, Harley-street, W.; Mrs. H. D. Rolleston (honorary treasurer), 55, Upper Brook-street, W.; Miss Frank (honorary secretary), 3, Elvaston-place, S.W.; and Mrs. Weaver (honorary secretary for artistes), The Lindens, 38, Circus-road, N.W.

Reviews and Notices of Books.

A System of Medicine. By Many Writers. Edited by Sir T. CLIFFORD ALLBUTT, M.D. Camb., Regius Professor of Physic in the University of Cambridge; and HUMPHRY DAVY ROLLESTON, M.D. Camb., Senior Physician to St. George's Hospital. Volume VII.: Diseases of the Muscles, the Trophoneuroses, Diseases of the Nerves, Vertebral Column, and Spinal Cord. Pp. 900. Price 25s. net. Volume VIII.: Diseases of the Brain and Mental Diseases. London: Macmillan and Co. 1910. Pp. 1070. Price 25s. net.

THESE two volumes, which together run almost to 2000 pages, represent the highwater mark of contemporary British neurology, and bear eloquent witness to its strength and vitality. In no domain of medical science have greater strides been taken during the last decade than in the adjacent fields of neurology and psychiatry, and this progress is mirrored in the pages of the two handsome volumes under review. They furnish a notable advance on the previous edition, not only by way of revision, but also by the inclusion of a vast amount of fresh material. Thus the section on Diseases of Muscles has been reinforced by additional articles on Amyotonia Congenita (Dr. James Collier), Myasthenia Gravis (Dr. E. Farquhar Buzzard), Family Periodic Paralysis (Professor J. Michell Clarke), and the Neuritic Type of Progressive Muscular Atrophy (Dr. F. E. Batten). In the same volume there is an entirely new article by Dr. F. W. Mott, an Introduction to Neuro-pathology, which is a little book in itself, of over 120 pages, and is characterised by its authoritative and lucid presentation of many important questions. Sir William R. Gowers has contributed a new article on Medical Ophthalmology. But to specify all the new contributions would be superfluous; the student and the practitioner can rest assured that the mere fact that there are something like 20 of these is ample evidence of the thoroughness with which the task of editing has been performed, while at the same time it makes the volumes a thesaurus of modern expert knowledge in the extensive specialty of nervous and mental diseases.

The reader will find in the article by Sir David Ferrier on the Regional Diagnosis of Cerebral Disease a comprehensive survey of a field of research the limits of which have widened in every direction since he entered it as a pioneer more than 30 years ago. It would be difficult to discover a nicer appreciation of the line between fact and fiction in neurology, or a sounder and more judicial weighing of experimental and clinical evidence than is exhibited by the author of this admirable contribution. It is enriched by fresh illustrations, and its value is enhanced by tabulated conclusions, summarised at the end of each chapter. The article on Aphasia and other Speech Defects, contributed by Dr. H. Charlton Bastian and revised by Dr. Collier, contains interesting paragraphs on the iconoclastic theory of aphasia associated with the name of Professor Pierre Marie, in which the authors support the traditional view, and with excellent reason. It is satisfactory to note the large amount of space devoted to the so-called "functional" diseases of the nervous system. The late Professor Brissaud used to say that nothing could be less scientific than the establishment of a hierarchy among medical problems based on the relative severity of symptoms. Apart from the question of prognosis, there can be no division of diseases into major and minor. Hence the comparatively "harmless" affections of "the nerves" deserve and require adequate consideration; their importance is not to be gauged by their symptomatic insignificance. In the articles on tics, facial spasm, head-nodding, night-terrors, occupation-neuroses, hysteria, and neurasthenia,

replete as they are with therapeutic wisdom, the reader will find a great deal to instruct, and even to amuse, for more than one of them reveals touches of genial humour and a kindly interest in the faults and foibles of our common humanity which lift the contributions from the level of mere text-book descriptions to the realm of literature in the best sense of the word.

The section of Vol. VIII. which is concerned with mental diseases, that is to say the insanities, is perhaps one in which, generally speaking, the attitude of some of the contributors is conservative; at the same time it is healthily independent. The reader will not find that the tenets of the Kraepelin school, for instance, are assimilated without question; indeed, the classification that has been adopted precludes the possibility of this; at the same time there is still so much flux in the matter of expert opinion on the systematisation of mental disease that it is well to hesitate and to give a verdict of "not proven" should the facts demand it. Thus Dr. T. S. Clouston declares against the term "dementia præcox," notwithstanding its ready adoption on the Continent and in America, and advances cogent reasons for the faith that is in him.

It is a pleasure to pick up either of these two volumes and scan its pages at leisure. The level of scholarship is so uniformly high, and the vehicle of expression of so many of the articles a terse and masculine English, that as a readable compendium of neurology it is second to none; it redounds to the credit alike of the editors and the contributors, and its place in the medical literature of to-day is amply assured.

The Essentials of Histology (Descriptive and Practical) for the Use of Students. By E. A. SCHÄFER, M.D. Berne, Sc.D. Dub., LL.D., F.R.S., Professor of Physiology in the University of Edinburgh. Eighth edition. London: Longmans, Green, and Co. 1910. Pp. 571. Price 10*s.* 6*d.* net.

THIS is the eighth edition of this book within a quarter of a century, and each edition has shown a progressive improvement, besides reflecting the advances in the subject. The present edition is somewhat larger than its predecessor (1907), but the increase is mainly due to additional illustrations, many of them being photographs of microscopical preparations. Unfortunately, the magnifying powers used are not always stated. The introductory section on cells and ovum is very well illustrated, but we think that the printer has hardly hit the correct colour of the red blood corpuscles on p. 53. The fibres round the margin of the red blood corpuscles were first described by Martin Heidenhain in 1894, and later by Meves and Bryce, and a figure of the lepidosiren's corpuscles by Bryce is given, while the work of Meves is drawn on for illustrations of the blood platelets. Perhaps it might be well to state more fully the exact distribution of ciliated epithelium, elastic and lymphoid tissue. Naturally the work of Cajal has been freely used and duly acknowledged for illustrations of the structures of the nervous system. On p. 340 (Fig. 431) are two typical nerve cells from enteric ganglia copied from Dogiel and stained by the methylene blue method. It is not stated that one cell (A) represents I. type (motor) and B II. type (sensory). Fig. 303, part of a tonsil, and Fig. 342, a transverse section of the hair follicles of the scalp, seem to us rather indistinct. The account of the mammary gland might with advantage be expanded. The method of staining Fig. 422 might have been stated. The transverse section of the appendix does not seem sharp enough. Perhaps a scheme of the liver showing the relation of the bile-ducts to several lobules might be introduced in a later issue. It would be easy in the table on p. 370, dealing with the uriniferous tubules, to add another column showing the sizes of the parts mentioned.

We have ventured to offer a few suggestions, though where all is so good it may seem ungrateful to indicate even such small shortcomings as we have mentioned. The student by merely turning the pages can refresh his visual centres with a good pictorial *coup d'œil* of the leading features of histology. The appendix is short and practical.

Glaucoma. By THOMSON HENDERSON, M.D. Edin. London: Edward Arnold. 1910. Pp. 222. Price 10*s.* 6*d.* net.

Dr. Thomson Henderson says in his preface that "the aim of the present work is to bring forward sufficient cumulative evidence to establish the circulatory nature of the intra-ocular pressure." If this were all there would be nothing very revolutionary in his thesis. His fundamental axiom, however, is that in so far as normal and pathological variations of tension are concerned the walls of the globe are not elastic but rigid. Hence the conditions of intra-ocular tension subserve in all points the Munro-Kellie doctrine of intracranial pressure. His essential thesis, therefore, is "to correlate the conditions of the eye with those already proved by Leonard Hill as existing in the brain." As is eminently fitting, he has dedicated his work to that distinguished physiologist. He has devoted an enormous amount of labour and ingenuity to the task of correlation, but we cannot avoid the suspicion that he has found the task more difficult than he would be willing to admit. For if the thesis is true then many of the accepted facts of the anatomy of the blood-vessels of the eye and most of the researches into the physiology of the intra-ocular pressure are manifestly erroneous, and the whole anatomy of the anterior ciliary system of blood-vessels must be revised. This is but one point of many on which our views must submit to a revolutionary change if the thesis is adopted in its entirety. To cite only two practical details, the rationale of iridectomy is quite other than has been supposed, and the search for a safe means of producing a filtering cicatrix, to which so much attention has recently been directed, is mere ploughing of the sands.

Dr. Henderson's arguments are in every respect worthy of serious consideration, which they will doubtless receive from physiologists and ophthalmologists. The latter, at any rate, cannot afford to ignore an able and conscientious contribution to so important a subject in face of the fact that it bears so nearly upon successful practice and treatment.

Feeble-Mindedness in Children of School-Age. By C. P. LAPAGE, M.D. Vict., M.R.C.P. Lond. Manchester: University Press. 1911. Pp. 359. Price 5*s.* net.

THE recent awakening of interest in the question of the feeble-minded, which has been further stimulated by the expectation that the problem is shortly to come up for legislative treatment, has led to the publication of several works dealing with various aspects of the subject. Dr. Lapage has taken as his theme one of the most important of these aspects. His handbook is intended for school medical officers and for teachers and social workers who have to deal with feeble-minded children, and it is also designed to exercise a propagandist influence and to familiarise the general public with the main facts of the problem and to emphasise its practical importance. It is not very easy to realise so many different ambitions in a single volume, and the work appears in many ways to have suffered from the author's desire to cast his net too widely. The reader, for instance, who needs to be told that the trachea is the windpipe and that toxic means poisonous

will hardly be called on to undertake the medical treatment of cretinism, and can therefore derive no advantage from being informed how to graduate the dose of thyroid extract; while, on the other hand, a good deal of the matter apparently intended for the benefit of school medical officers is too vague and scrappy to be of much use. And these criticisms apply with even more force to the author's treatment of the questions of theory to which he has thought it necessary to refer. It may be a matter of opinion whether the discussion of contending doctrines of heredity should have a place in a work of this kind, but if these doctrines are to be spoken of at all, their discussion should be serious; no useful end can be served by the attempt to summarise the theories of Mendelism in six lines.

The book would have gained by the omission of all such speculative matter, and the space so made available might have been utilised for the fuller treatment of points of more practical moment, such, for instance, as the diagnosis of the degree of mental defect by means of mental tests, a subject which is hardly touched upon by Dr. Lapage, though it has been generally recognised by most authorities on this question, here and abroad, as vitally important in the study and treatment of conditions of mental deficiency. The best things in the volume are the practical hints as to the management of feeble-minded children, and in this connexion special praise should be given to the admirable appendix on Treatment and Training contributed by Miss Mary Dendy. The book is written in a style the simplicity of which sometimes degenerates into carelessness as, for instance, when we are informed that "deficient or delayed control over the action of the bladder and bowels ..... is very common, though it is usually learnt before the child comes to school."

Medical Diagnosis. By W. MITCHELL STEVENS, M.D. Lond., M.R.C.P. Lond., Senior Assistant Physician to Cardiff Infirmary; Lecturer in Pharmacology in University College, Cardiff. With 177 illustrations. London: H. K. Lewis. Pp. 1571. Price 25*s*.

STUDENTS cannot too often be impressed with the fact that attendance in the wards and out-patient rooms of a hospital is the only means by which a practical knowledge of medicine can be obtained; nevertheless, some guide is required in the form of a book to enable them to refresh their memories and arrange their ideas after verbal instruction by the physician. In the work now before us Dr. Stevens has set forth in a thoroughly well-organised manner the multitudinous facts and methods of examination which enable a diagnosis to be arrived at. Dr. Stevens has covered a wider ground than is usual in a work dealing with diagnosis. For he not only describes methods of physical examination, but gives a brief description of the symptoms of a disease, and then proceeds to discuss in detail the differential diagnosis.

The book is divided into 39 sections, and all diseases described in a text-book on medicine are duly considered. The first section is headed "General Symptoms and Physical Signs." The clinical significance of certain general symptoms is first indicated, such as loss of flesh, weakness, malaise with pains in the limbs, sweating, pruritus, and fainting. Then follows much useful information in regard to the clinical significance of certain general signs, such as the state of nutrition, the posture and gait, the condition of the skin and subcutaneous tissues, points to be noted in the facial expressions, and in the condition of the hands, arms, feet, and legs. Numerous valuable hints may be derived from a perusal of the pages devoted to these subjects which will constantly be found helpful in actual clinical work.

The second section is taken up with a consideration of the infectious diseases. A uniform plan is adopted in the discussion of each fever. Scarlet fever may be taken as an example. The first words are: "General diagnosis is founded on the following points": then follow descriptions of the onset, the physical examination which is necessary, the course of the disease, its varieties, and the complications which may ensue. Then the differential diagnosis is set forth from measles, rötheln, the "fourth disease," small-pox, "febricula," diphtheria, and tonsillitis. This sequence is followed with each disease throughout the work and with a thoroughness and completeness worthy of the highest praise. In addition to sections dealing with the various systems of the body are others in which are considered diseases due to animal parasites, and intoxications, poisoning, and sunstroke.

We have read this book with much pleasure, and have on several occasions tested it in actual practice with complete satisfaction. We can cordially recommend it to students as a guide to their hospital work and to practitioners as a useful reference in cases of doubtful diagnosis.

The Cradle of the Deep, an Account of a Voyage to the West Indies. By Sir FREDERICK TREVES, Bart., G.C.V.O., C.B., LL.D., Serjeant-Surgeon to the King; Surgeon-in-Ordinary to H.M. Queen Alexandra. Popular edition. London: Smith, Elder, and Co. 1910. Pp. 378. Price 6*s*. net.

THE author of this fascinating volume certainly has the pen of the ready writer, for he has given us in truth such vivid pictures of the West Indian islands that the reader for the nonce must think that he is in reality transported thither. And surely the fair lands which we find here portrayed are worthy of the hand of a master in their description. What happenings of desperate adventure have they been the seat of; here under the steaming sun of the tropics the pirate harried the sea; here Raleigh, Drake, Dampier, Frobisher, and Hawkins served their apprenticeship; whilst it was also here that Nelson learnt from the quarter-deck the elements of war.

The author takes us through the islands one by one and we cannot imagine any more popular West India guide book. We may take the chapters dealing with Barbados as an example of the author's mode of procedure. Here he first describes how the island came into our possession; next the characteristic features of its capital Bridgetown are detailed, remarks on its climate follow, and from the description given Barbados must be an altogether desirable locality to reside in, for there is no malaria or yellow fever, the climate is good, the sea-bathing cannot be surpassed, and there is an excellent water-supply. The author narrates in striking language the facts concerning the excellent lazaretto of Barbados for the reception of lepers; the sad features of the disease have surely never been depicted before in more moving diction. Succeeding the description of the lazaretto comes that of the lunatic asylum, while the notable buildings of the island come next under his purview, illustrated by some excellent photographs, after which attention is drawn to some of its natives who have obtained positions of eminence. The manners, mode of dress, and peculiar customs of the negroes are humorously detailed, and finally there is an arresting description of that most terrible day in the annals of Barbados, when "the sun stood still," the day of the unparalleled eruption of Mont Soufrière on the Island of St. Vincent.

The other islands of the Spanish Main are treated in a similar full and picturesque manner. The reader will be particularly impressed with the chapter headed "A Record of Ten Minutes," dealing with the terrible earthquake of

Jamaica in 1907. Nor should he neglect the account of the death of that old sea-dog Drake which the author has given us in epic words.

It is given to but few medical men to see at their leisure the wonders of foreign lands. Sir Frederick Treves's book shows, however, that the medical man makes an ideal observer when his lot allows him to travel widely, for in reading these travels the stay-at-home can for the moment in spirit transport himself to the historical regions of the "Cradle of the Deep" and wander amongst their gorgeous coasts.

Essentials of Modern Electro-therapeutics. By FREDERICK FINCH STRONG, M.D., Instructor in Electro-therapeutics at Tufts College Medical School, Boston. London: Rebman, Limited. Pp. 112. Price 4*s.* net.

THIS is an epitome of the various facts comprised in the subject indicated by the title, dealing also with the use of the X rays, ultra-violet rays and photo-therapy, and the therapeutic uses of ozone. With this wide range of subjects, any one of which could, if fully treated, fill a good-sized volume, it would be unreasonable to expect any part to be dealt with in a complete or even full manner. But the book is very profusely illustrated, many of the blocks taking up the whole, or greater part, of a page, making it, in fact, an illustrated syllabus.

In one particular it calls for praise—it is written on the basis of the modern electron theory, and this point of view is consistently adhered to throughout. The diagrams showing the various modifications in technique are very numerous and very clear, and there is never any doubt as to the author's meaning. The student will thus find this work very useful in the way of obtaining an outline of the subjects treated, though his teachers may not entirely endorse the views on all points. In the last chapter on the therapeutic uses of ozone we are told of the writer's combined treatment of pulmonary tuberculosis, which is ingenious. In this method "the patient receives at a single sitting the combined action of the high-frequency current, the radiant energy from the electrodes, pure oxygen, partially ionised, mixed with pure ozone and with antiseptic aromatic vapours." This method is, the writer admits, of too recent invention to permit of clinical verification.

Der Intraokulare Flüssigkeitsstrom in seinen Beziehungen zum Biomechanischen Aufbau des Auges unter gesunden Verhältnissen, beim Glaukom und bei der Kurzsichtigkeit. (*The Intra-ocular Fluid in its Relationship to the Biomechanical Structure of the Eye in Healthy Conditions, in Glaucoma, and in Myopia.*) Von Dr. J. KUSCHEL. Berlin: S. Karger. 1910. Pp. 252. Price 7 marks.

THIS volume is a collection of papers contributed to the *Zeitschrift für Augenheilkunde*. The subject is treated in a purely theoretical manner with the exhaustiveness characteristic of German work, but also with not a little of the verbosity and obscurity of many German scientists. A short introduction on biometry, or the mechanical properties and conditions of the various structures of the eye, leads to a discussion of the architecture of the eye in its hydrostatic relations and as the basis of the regulation of intra-ocular pressure. The disturbances of the hydrostatic regulating apparatus of the eye are next considered, and the chief factor in the causation of glaucoma is attributed to senile sclerosis. Comparison of the defects in the field of vision met with in glaucoma and in papillœdema is held to prove the identity of their origin in intrapapillary atrophy of the optic nerve fibres brought about by stretching. The author states original views on the axial elongation of the eye and its effects upon the lymph flow in the development of myopia. In them accommodation plays a prominent part, though experimental evidence is against the view that accommodation leads to any change in the intra-ocular pressure.

The highly technical matter may be commended to the notice of ophthalmologists, who will find some material stimulating thought amid much that will arouse adverse criticism.

LIBRARY TABLE.

Introduction to the Analysis of Drugs and Medicines. An Elementary Handbook for the Beginner. By BURT E. NELSON. New York: Wiley and Sons; London: Chapman and Hall, Limited. 1910. Pp. 384. Price 12*s.* 6*d.* net.—This is quite a good book and one which has long been wanted. The analyst often experiences a considerable loss of time consulting subjects that are widely scattered over voluminous literature, and this is particularly the case when he wants some hints as to how to proceed in the analysis of drugs and medicines. He frequently finds that he has got to work out a method for himself, so difficult is it to produce references which exactly meet his case. Then, again, his powers are limited by the fact that there are present in so many medicinal preparations chemically indifferent substances which have no distinctive characteristics, and, as the author says, the complete composition of most of our plant drugs is unknown. And we agree that the successful detector in this domain of analytical work "must needs possess a fair working knowledge of pharmacology and therapeutics, a thorough familiarity with the sensible properties of the commonly used pharmaceutical preparations, a knowledge of the various proximate constituents of organic drugs, of the anatomical features by which these drugs may be identified when in a powdered condition, and finally, with the methods of inorganic and organic analysis." Even when so qualified he may be beaten. Mr. Nelson's book, however, will materially help the analyst to obtain the qualification, for the 11 chapters here presented cover a good deal of the ground, give valuable practical hints, point out fallacies, and encourage the reader to pursue the subject with increasing interest, so that many will be induced, we imagine, to apply their own energies to the working out of further new and reliable methods of analysis.

Aids to Pathology. By HARRY CAMPBELL, M.D., B.S. Lond., F.R.C.P. Lond. Second edition. Pp. 228. *Aids to Bacteriology.* By C. G. MOOR, M.A. Cantab., F.I.C., and WILLIAM PARTRIDGE, F.I.C. Second edition. Pp. 240. London: Baillière, Tindall, and Cox. 1911. Price, each volume, cloth, 3*s.* 6*d.* net; paper, 3*s.* net.—These are specimens of a kind of book that, according to the method in which it is used, may prove either a useful servant or a most dangerous guide. Used merely to refresh the memory in reviewing a subject properly and adequately learned elsewhere they are likely to prove of service to students. But their use as "crams," intended to take the place of study for examination purposes, would be as reprehensible as it is dangerous. The "Aids to Pathology" is, from the nature of the subject, sketchy; the "Aids to Bacteriology," however, contains a surprisingly large amount of information arranged in a systematic manner.

Agricultural Bacteriology, Theoretical and Practical. By JOHN PERCIVAL, M.A., F.L.S., Professor of Agricultural Botany, University College, Reading. London: Duckworth and Co. 1910. Pp. 408. Price 7*s.* 6*d.* net.—The study of the application of bacteriology to the arts and industries is of comparatively recent growth, but each year intensifies the practical importance of the subject. The view at one time prevailed that micro-organisms could only be agencies of evil import to man, they produced disease, and, where possible, they should be destroyed. It is

will hardly be called on to undertake the medical treatment of cretinism, and can therefore derive no advantage from being informed how to graduate the dose of thyroid extract; while, on the other hand, a good deal of the matter apparently intended for the benefit of school medical officers is too vague and scrappy to be of much use. And these criticisms apply with even more force to the author's treatment of the questions of theory to which he has thought it necessary to refer. It may be a matter of opinion whether the discussion of contending doctrines of heredity should have a place in a work of this kind, but if these doctrines are to be spoken of at all, their discussion should be serious; no useful end can be served by the attempt to summarise the theories of Mendelism in six lines.

The book would have gained by the omission of all such speculative matter, and the space so made available might have been utilised for the fuller treatment of points of more practical moment, such, for instance, as the diagnosis of the degree of mental defect by means of mental tests, a subject which is hardly touched upon by Dr. Lapage, though it has been generally recognised by most authorities on this question, here and abroad, as vitally important in the study and treatment of conditions of mental deficiency. The best things in the volume are the practical hints as to the management of feeble-minded children, and in this connexion special praise should be given to the admirable appendix on Treatment and Training contributed by Miss Mary Dendy. The book is written in a style the simplicity of which sometimes degenerates into carelessness as, for instance, when we are informed that "deficient or delayed control over the action of the bladder and bowels ..... is very common, though it is usually learnt before the child comes to school."

Medical Diagnosis. By W. MITCHELL STEVENS, M.D. Lond., M.R.C.P. Lond., Senior Assistant Physician to Cardiff Infirmary; Lecturer in Pharmacology in University College, Cardiff. With 177 illustrations. London: H. K. Lewis. Pp. 1571. Price 25*s*.

STUDENTS cannot too often be impressed with the fact that attendance in the wards and out-patient rooms of a hospital is the only means by which a practical knowledge of medicine can be obtained; nevertheless, some guide is required in the form of a book to enable them to refresh their memories and arrange their ideas after verbal instruction by the physician. In the work now before us Dr. Stevens has set forth in a thoroughly well-organised manner the multitudinous facts and methods of examination which enable a diagnosis to be arrived at. Dr. Stevens has covered a wider ground than is usual in a work dealing with diagnosis. For he not only describes methods of physical examination, but gives a brief description of the symptoms of a disease, and then proceeds to discuss in detail the differential diagnosis.

The book is divided into 39 sections, and all diseases described in a text-book on medicine are duly considered. The first section is headed "General Symptoms and Physical Signs." The clinical significance of certain general symptoms is first indicated, such as loss of flesh, weakness, malaise with pains in the limbs, sweating, pruritus, and fainting. Then follows much useful information in regard to the clinical significance of certain general signs, such as the state of nutrition, the posture and gait, the condition of the skin and subcutaneous tissues, points to be noted in the facial expressions, and in the condition of the hands, arms, feet, and legs. Numerous valuable hints may be derived from a perusal of the pages devoted to these subjects which will constantly be found helpful in actual clinical work.

The second section is taken up with a consideration of the infectious diseases. A uniform plan is adopted in the discussion of each fever. Scarlet fever may be taken as an example. The first words are: "General diagnosis is founded on the following points": then follow descriptions of the onset, the physical examination which is necessary, the course of the disease, its varieties, and the complications which may ensue. Then the differential diagnosis is set forth from measles, rötheln, the "fourth disease," small-pox, "febricula," diphtheria, and tonsillitis. This sequence is followed with each disease throughout the work and with a thoroughness and completeness worthy of the highest praise. In addition to sections dealing with the various systems of the body are others in which are considered diseases due to animal parasites, and intoxications, poisoning, and sunstroke.

We have read this book with much pleasure, and have on several occasions tested it in actual practice with complete satisfaction. We can cordially recommend it to students as a guide to their hospital work and to practitioners as a useful reference in cases of doubtful diagnosis.

The Cradle of the Deep, an Account of a Voyage to the West Indies. By Sir FREDERICK TREVES, Bart., G.C.V.O., C.B., LL.D., Serjeant-Surgeon to the King; Surgeon-in-Ordinary to H.M. Queen Alexandra. Popular edition. London: Smith, Elder, and Co. 1910. Pp. 378. Price 6*s*. net.

THE author of this fascinating volume certainly has the pen of the ready writer, for he has given us in truth such vivid pictures of the West Indian islands that the reader for the nonce must think that he is in reality transported thither. And surely the fair lands which we find here portrayed are worthy of the hand of a master in their description. What happenings of desperate adventure have they been the seat of; here under the steaming sun of the tropics the pirate harried the sea; here Raleigh, Drake, Dampier, Frobisher, and Hawkins served their apprenticeship; whilst it was also here that Nelson learnt from the quarter-deck the elements of war.

The author takes us through the islands one by one and we cannot imagine any more popular West India guide book. We may take the chapters dealing with Barbados as an example of the author's mode of procedure. Here he first describes how the island came into our possession; next the characteristic features of its capital Bridgetown are detailed, remarks on its climate follow, and from the description given Barbados must be an altogether desirable locality to reside in, for there is no malaria or yellow fever, the climate is good, the sea-bathing cannot be surpassed, and there is an excellent water-supply. The author narrates in striking language the facts concerning the excellent lazaretto of Barbados for the reception of lepers; the sad features of the disease have surely never been depicted before in more moving diction. Succeeding the description of the lazaretto comes that of the lunatic asylum, while the notable buildings of the island come next under his purview, illustrated by some excellent photographs, after which attention is drawn to some of its natives who have obtained positions of eminence. The manners, mode of dress, and peculiar customs of the negroes are humorously detailed, and finally there is an arresting description of that most terrible day in the annals of Barbados, when "the sun stood still," the day of the unparalleled eruption of Mont Soufrière on the Island of St. Vincent.

The other islands of the Spanish Main are treated in a similar full and picturesque manner. The reader will be particularly impressed with the chapter headed "A Record of Ten Minutes," dealing with the terrible earthquake of

Jamaica in 1907. Nor should he neglect the account of the death of that old sea-dog Drake which the author has given us in epic words.

It is given to but few medical men to see at their leisure the wonders of foreign lands. Sir Frederick Treves's book shows, however, that the medical man makes an ideal observer when his lot allows him to travel widely, for in reading these travels the stay-at-home can for the moment in spirit transport himself to the historical regions of the "Cradle of the Deep" and wander amongst their gorgeous coasts.

Essentials of Modern Electro-therapeutics. By FREDERICK FINCH STRONG, M.D., Instructor in Electro-therapeutics at Tufts College Medical School, Boston. London: Rebman, Limited. Pp. 112. Price 4*s.* net.

THIS is an epitome of the various facts comprised in the subject indicated by the title, dealing also with the use of the X rays, ultra-violet rays and photo-therapy, and the therapeutic uses of ozone. With this wide range of subjects, any one of which could, if fully treated, fill a good-sized volume, it would be unreasonable to expect any part to be dealt with in a complete or even full manner. But the book is very profusely illustrated, many of the blocks taking up the whole, or greater part, of a page, making it, in fact, an illustrated syllabus.

In one particular it calls for praise—it is written on the basis of the modern electron theory, and this point of view is consistently adhered to throughout. The diagrams showing the various modifications in technique are very numerous and very clear, and there is never any doubt as to the author's meaning. The student will thus find this work very useful in the way of obtaining an outline of the subjects treated, though his teachers may not entirely endorse the views on all points. In the last chapter on the therapeutic uses of ozone we are told of the writer's combined treatment of pulmonary tuberculosis, which is ingenious. In this method "the patient receives at a single sitting the combined action of the high-frequency current, the radiant energy from the electrodes, pure oxygen, partially ionised, mixed with pure ozone and with antiseptic aromatic vapours." This method is, the writer admits, of too recent invention to permit of clinical verification.

Der Intraokulare Flüssigkeitsstrom in seinen Beziehungen zum Biomechanischen Aufbau des Auges unter gesunden Verhältnissen, beim Glaukom und bei der Kurzsichtigkeit. (*The Intra-ocular Fluid in its Relationship to the Biomechanical Structure of the Eye in Healthy Conditions, in Glaucoma, and in Myopia.*) Von Dr. J. KUSCHEL. Berlin: S. Karger. 1910. Pp. 252. Price 7 marks.

THIS volume is a collection of papers contributed to the *Zeitschrift für Augenheilkunde*. The subject is treated in a purely theoretical manner with the exhaustiveness characteristic of German work, but also with not a little of the verbosity and obscurity of many German scientists. A short introduction on biometry, or the mechanical properties and conditions of the various structures of the eye, leads to a discussion of the architecture of the eye in its hydrostatic relations and as the basis of the regulation of intra-ocular pressure. The disturbances of the hydrostatic regulating apparatus of the eye are next considered, and the chief factor in the causation of glaucoma is attributed to senile sclerosis. Comparison of the defects in the field of vision met with in glaucoma and in papilloedema is held to prove the identity of their origin in intrapapillary atrophy of the optic nerve fibres brought about by stretching. The author states original views on the axial elongation of the eye and its effects upon the lymph flow in the development of myopia. In them accommodation plays a prominent part, though experimental evidence is against the view that accommodation leads to any change in the intra-ocular pressure.

The highly technical matter may be commended to the notice of ophthalmologists, who will find some material stimulating thought amid much that will arouse adverse criticism.

LIBRARY TABLE.

Introduction to the Analysis of Drugs and Medicines. An Elementary Handbook for the Beginner. By BURT E. NELSON. New York: Wiley and Sons; London: Chapman and Hall, Limited. 1910. Pp. 384. Price 12*s.* 6*d.* net.—This is quite a good book and one which has long been wanted. The analyst often experiences a considerable loss of time consulting subjects that are widely scattered over voluminous literature, and this is particularly the case when he wants some hints as to how to proceed in the analysis of drugs and medicines. He frequently finds that he has got to work out a method for himself, so difficult is it to produce references which exactly meet his case. Then, again, his powers are limited by the fact that there are present in so many medicinal preparations chemically indifferent substances which have no distinctive characteristics, and, as the author says, the complete composition of most of our plant drugs is unknown. And we agree that the successful detector in this domain of analytical work "must needs possess a fair working knowledge of pharmacology and therapeutics, a thorough familiarity with the sensible properties of the commonly used pharmaceutical preparations, a knowledge of the various proximate constituents of organic drugs, of the anatomical features by which these drugs may be identified when in a powdered condition, and finally, with the methods of inorganic and organic analysis." Even when so qualified he may be beaten. Mr. Nelson's book, however, will materially help the analyst to obtain the qualification, for the 11 chapters here presented cover a good deal of the ground, give valuable practical hints, point out fallacies, and encourage the reader to pursue the subject with increasing interest, so that many will be induced, we imagine, to apply their own energies to the working out of further new and reliable methods of analysis.

Aids to Pathology. By HARRY CAMPBELL, M.D., B.S. Lond., F.R.C.P. Lond. Second edition. Pp. 228. *Aids to Bacteriology.* By C. G. MOOR, M.A. Cantab., F.I.C., and WILLIAM PARTRIDGE, F.I.C. Second edition. Pp. 240. London: Baillière, Tindall, and Cox. 1911. Price, each volume, cloth, 3*s.* 6*d.* net; paper, 3*s.* net.—These are specimens of a kind of book that, according to the method in which it is used, may prove either a useful servant or a most dangerous guide. Used merely to refresh the memory in reviewing a subject properly and adequately learned elsewhere they are likely to prove of service to students. But their use as "crams," intended to take the place of study for examination purposes, would be as reprehensible as it is dangerous. The "Aids to Pathology" is, from the nature of the subject, sketchy; the "Aids to Bacteriology," however, contains a surprisingly large amount of information arranged in a systematic manner.

Agricultural Bacteriology, Theoretical and Practical. By JOHN PERCIVAL, M.A., F.L.S., Professor of Agricultural Botany, University College, Reading. London: Duckworth and Co. 1910. Pp. 408. Price 7*s.* 6*d.* net.—The study of the application of bacteriology to the arts and industries is of comparatively recent growth, but each year intensifies the practical importance of the subject. The view at one time prevailed that micro-organisms could only be agencies of evil import to man, they produced disease, and, where possible, they should be destroyed. It is

not long ago that sanitary science regarded the sterilisation of sewage as a scientific means of removing an offence from our midst. Now, in many directions the growth of organisms is stimulated and encouraged, for they serve as effective purifying agencies working out an issue favourable to man's well-being. This excellent book develops this idea amongst many other matters. "The science of bacteriology which," writes the author, "has been so much the domain of the student of disease is now being applied to the elucidation and solution of many of the problems which confront the farmer, gardener, and dairyman in their daily life." Agricultural authorities accordingly are very properly expecting a knowledge of bacteriology from the candidates for examination in agriculture, dairying, and horticulture. It is a working practical acquaintance with the bacteriology of these subjects which this book provides, and the stages are easy for the beginner, assuming that he has a fair groundwork of chemistry and physiology. The chapters on fertilisers, milk, cream, butter, cheese, moulds, and yeasts are excellent and fully in accord with recent developments of our knowledge. In the interesting chapter on the bacteriology of the soil the author gives an account of the action of antiseptics and heat upon the soil, a branch of scientific study which is of increasing importance and which has claimed a good deal of attention lately. As is now well known, soils which have been partially sterilised by heating to 90° or 95° C. for a few hours resemble those which have been treated with antiseptic agents. "There is at first a great decrease of bacteria, but this is soon followed by a rapid development of organisms and the production of considerable amounts of ammonium compounds which increase the immediate fertility of the soil." Apart from examinational requirements the book is of the utmost interest to all those who have the scientific advancement of agriculture at heart, for it gives a very clear insight into the natural processes concerned. It indicates where successes can be increased and where failures can be avoided.

Subconscious Phenomena. By HUGO MÜNSTERBERG, THEODORE RIBOT, PIERRE JANET, JOSEPH JASTROW, BERNARD HART, and MORTON PRINCE. London: Rebman, Limited. 1910. Pp. 141. Price 5*s.* net.—Nothing could be more timely than the appearance of this little book on Subconscious Phenomena, containing a symposium on the subject by men whose names are adequate guarantee of the worth and readableness of the essays they have contributed. If anyone thinks that finality in the matter of the subconscious mind and its interpretation has been attained, or appears likely soon to be attained, the perusal of this interesting volume will disillusion him. But it is only by the collation of dissimilar views in some such way as this that agreement in terminology can be effected, for this is the first step towards the unification of the conception. We can cordially recommend this symposium to all who would keep themselves *au fait* with the subject of the "subconscious mind."

Die Paralysis Agitans. Eine Monographie von Dr. KURT MENDEL, Nervenarzt in Berlin. Berlin: S. Karger. 1911. Pp. 106. Price 4 marks.—There is little new in this encyclopædic monograph on Parkinson's disease. It represents a great deal of labour in the collection of recorded cases, but the author is more content to reproduce the opinions and facts of others than to subject them to criticism. We are no further forward as regards the pathogenesis of the disease. "Ignoramus" is the author's last word. At the same time, however, there are indications that the field of research is being more and more limited to certain levels of the central nervous system. A bibliography of 284 references will be found useful by the neurologist.

Die Störungen der Sprache. By Dr. ADOLF KUSSMAUL, Professor in Strasburg. Fourth edition, with a Commentary by Professor Dr. HERMANN GUTZMANN, Berlin. Leipzig: F. C. W. Vogel. 1910. Pp. 409. Price 10 marks.—The fourth edition of Kussmaul's classic treatise on disturbances of speech is prefaced by an interesting statement from its editor, Dr. Gutzmann. Anxious to leave entirely untouched the work of one to whom the scientific world owes much, yet fully aware of its incompleteness in the light of recent research, Dr. Gutzmann has added a separate commentary of about 100 pages in which adequate reference is made to the results of modern observers. This is an admirable text-book on aphasia and allied disorders for which the student of the subject will find a place on his bookshelf.

County Court Practice Made Easy or Debt Collection Simplified. By A SOLICITOR. Fourth (revised and enlarged) edition. London: Effingham Wilson. 1911. Pp. 158. Price 2*s.* 6*d.* net.—This is a guide to the technicalities of county court practice for the benefit of those who may seek to obtain without legal assistance the payment of small debts. The author if he writes anonymously need incur no imputation other than that of modesty in doing so. His object is to assist plaintiffs and defendants appearing in person in the county courts to understand the formalities with which they will have to comply, but in an explanatory dialogue which precedes his more directly instructive chapters he explains that he has no intention of injuring his professional colleagues by facilitating litigation in person, and that he runs no risk of so doing. His point is that there are many cases dealt with in the county courts which are too simple for legal assistance to be necessary, and which involve amounts too small for it to be worth the while of solicitors to undertake them. In such circumstances the litigant tries to conduct his own case and gets hopelessly fogged, hindered, and irritated by necessary formalities, which seem hopelessly complicated to those unused to them, but which, expounded by the author with commendable lucidity in a breezy tone of good-humoured advice, will be found perfectly intelligible. The education and intelligence of the professional man should assist him in mastering its contents, and it can confidently be recommended to medical practitioners who may be in the unenviable position of being owed fees which their patients do not mean to pay until they are compelled to do so. Various courses are open to those so situated, including the abandonment of the fees in question, but if any should desire to conduct his own case from the onset, or to consider the advisability of so doing, "A Solicitor's" little volume will be found to contain all that he needs to know as to the practice (not, be it remembered, as to the law) involved. It has, as its title page informs us, passed through three editions already and has been revised and enlarged, but we suggest that recent legislation as to the taking of oaths should be considered by the author with relation to passages in which the dirty and insanitary practice of "kissing the book" is referred to.

Report of the Conference of Health Promoting Institutions. London: P. S. King and Son. 1911. Pp. 180. Price 1*s.*—The fifth annual general meeting of the National League for Physical Education and Improvement and the First Conference of Health Promoting Institutions were held simultaneously at the Guildhall, London, at the end of 1910, and the valuable information contained in the papers read at that conference has now been collected into book form. The conference was attended by a large number of representatives, medical and lay, of health authorities throughout the country, and the result of the conference has, we believe, been productive of much good work. The care of the child is a subject that more and more is engaging the attention of those who have at heart the welfare of the State, and Miss

Helen M. Blagg's paper on Infantile Welfare Schemes Abroad will repay careful attention. After summarising the efforts which foreign countries are making on behalf of the children Miss Blagg, with a famous vision in her mind, concludes with the words: "It is not an easy task to build Jerusalem, but in building this new city we cannot be wrong in beginning with the infants. Let us see that they are allowed to have life, and life more abundantly." It is to be regretted that the Proceedings have been published without an index, for the table of contents is of little value for purposes of quick reference.

Hints to Dressers. By SAMUEL ANDERSON, B.Sc., M.B., C.M. Glasg., D.T.M. & H. Camb., Major, Indian Medical Service. Calcutta: Thacker, Spink, and Co. 1910. Pp. 77. Price 1 rupee.—This little book is meant to prove useful to assistant surgeons, sub-assistant surgeons, and others engaged in practice in India. It contains concise and careful directions as to detail in the performance of the dresser's duties, the care of instruments, preparation of instruments, dressings, and patient for operation, dressing wounds, bandaging, and treatment of the conditions attendant on injury and operation. There are also some hints on eye surgery.

The Vagrant, What to do With Him. By R. MENZIES FERGUSSON, D.D. London: James Nisbet and Co., Limited. 1911. Pp. 62. Price 6*d.* net.—The vagrancy problem is so vast, and at the same time so urgent, that the Rev. R. M. Fergusson has performed a useful task in collecting into a small space from recently issued Blue-books much valuable information on the subject. The great army of tramps, as the author points out, is increasing in numbers, and the present system of dealing with the vagrant neither deters him nor affords any means of reclaiming him. As, sooner or later, the problem must be adequately dealt with, this concise summary of the present state of affairs will be found exceedingly convenient to everyone interested in a very pressing problem. There can be no doubt that a very large number of those who become chargeable to the Poor-law belong to the unfit, and the chapter describing the epileptic colony of Bethel in Westphalia, Germany, will in this connexion be read with interest. A chapter is also devoted to labour colonies in foreign countries.

The City of London Year Book and Civic Directory, 1911. London: W. H. and L. Collingridge. Pp. 336. Price 5*s.* net.—The information in this book is not wholly confined to the City over which the Lord Mayor presides, for a list of the members of the London County Council is included, and useful details with regard to that Council and other metropolitan public bodies are also given. Among the more interesting features of the book are lists of those upon whom the Freedom of the City has been conferred, an account of the Corporation of London, lists of the members of the City companies, the coats of arms of the companies, and the names and addresses of the liverymen. Admirable portraits of the Lord Mayor, Sir T. Vesey Strong, and his Sheriffs embellish a useful and in many respects an interesting and entertaining book of reference.

JOURNALS AND MAGAZINES.

The Journal of the Royal Sanitary Institute.—The number for April is given up to six lectures on Army Sanitation delivered at the Institute to officers of the Territorial Force by Lieutenant-Colonel C. H. Melville, R.A.M.C., Professor of Hygiene at the Royal Army Medical College. The practical methods for securing good water-supply and satisfactory conservancy are very succinctly stated, and are illustrated by numerous examples, very much to the point, from the author's wide experience. He desires that a boy's surroundings in civil life shall be sanitary, so that when he joins he will already know what a sanitary environment should be; then, in camps of instruction he will be trained most exactly and will learn how such an environment can be attained. In consequence, when he is on service and in a small detached party with the minimum of supervision, he will almost automatically carry out the precautions that are necessary to prevent damage arising from his excreta to his friends who may follow him. The diagrams of camps, latrines, destructors, and waste-water pits are most valuable. The great help which a medical officer in charge of troops can get from an energetic and sympathetic local medical officer of health is strongly emphasised. This number of the *Journal of the Royal Sanitary Institute*, like "The Territorial Medical Service" (6*d.*, reprinted from THE LANCET), should be in the hands of all medical officers in the Territorial Force. Lieutenant-Colonel Melville is to be congratulated on the excellence of the lectures which his zeal for military sanitation prompted him to deliver.

Paludism (being the Transactions of the Committee for the Study of Malaria in India). No. 2. January, 1911.—In THE LANCET of Oct. 22nd, 1910, we welcomed the appearance of this new periodical, which was to be devoted to the diffusion of knowledge on the subject of malaria in India, under the editorship of Major S. P. James, I.M.S. The second number of *Paludism* is in no way below the high level of the first issue; it comprises 117 pages of printed matter in which, first of all, is given an account of the progress of the work of the permanent organisation now established for the investigation of malaria in India, including the work done by the Central Scientific Committee, the provincial organisations, and by the general committee. This latter body, we learn, has decided to publish a handbook for the assistance of workers, and Major S. R. Christophers, I.M.S., has been instructed to undertake the task of preparing it. A series of recommendations has been drawn up by the central committee relating to the investigation of malaria and is included in this current number of *Paludism*. Two articles are contributed by Major Christophers, the first on "Epidemic Malaria of the Punjab, with a note on a method of predicting epidemic years," and the second on "The Development of the Egg Follicle in Anophelines" (illustrated). Captain A. C. MacGilchrist, I.M.S., furnishes an article on "Quinine and its Salts; their Solubility and Absorbability," and Lieutenant-Colonel Sir David Semple, R.A.M.C. (retired), contributes an interesting paper on the "Relation of Tetanus to the Hypodermic or Intramuscular Injection of Quinine." Two other articles are by Dr. C. A. Bentley, one on "Nyssomyzomyia Rossi and Malaria," and the other on "the Seasonal Malarial Infection of Neocellia Stephensi in Bombay." Some instructive "Notes on Mosquitoes" are then given, and the number concludes with a summary of recent literature relating to malaria in India as well as in other countries. This publication should prove of much help to all workers on the subject of malaria.

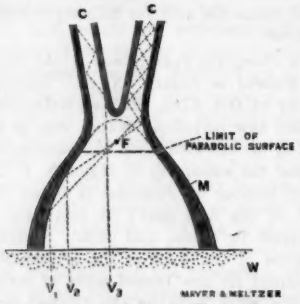
LITERARY INTELLIGENCE.—The Rev. E. G. O'Donoghue is writing the history of Bethlehem Hospital, of which he is chaplain, and is publishing it in the first instance in the quarterly issues of the illustrated magazine of the hospital, *Under the Dome*.

Dr. William Warren Potter of Buffalo, N.Y., who died on March 14th, aged 72 years, was a surgeon of repute. He had been secretary of the American Association of Obstetricians and Gynæcologists since 1888 and president of several important medical societies. He was editor of the *Buffalo Medical Journal* and was very highly esteemed throughout the American medical profession.

New Inventions.

A NEW FORM OF CHEST-PIECE FOR THE BINAURAL STETHOSCOPE.

THE principle upon which the chest-piece here illustrated depends for its utility is reflection from a parabolic surface whereby sound-vibrations coming from the outer portion of the area of chest covered by the instrument are reflected to a focus, and so into the collecting tubes, without the occurrence of multiple reflections from the wall of the chest-piece. Such multiple reflections occur in the ordinary form of chest-piece where the *convex* inner surface does not tend to focalise the peripheral vibrations; in the parabolic form, on the other hand, irregular reflection is reduced to a minimum, purity of tone is preserved, and the collecting tubes are placed in such a way that their inner openings are a short distance above the focus, the line of each tube being so arranged as to collect direct vibrations as well as the majority of those reflected through the focus.



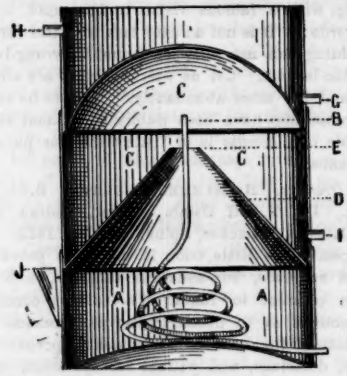
M, Wall of chest-piece in section. W, Chest wall. V_1, V_2, Peripheral vibrations which are reflected through focus F. V_3, Central vibrations. C, C, Collecting tubes.

The chest-piece (which can be fitted to the ordinary rubber tubes of the binaural stethoscope) is an "all-metal" one, made of a brass-copper alloy not unlike gun-metal; it can be made in german-silver also, and is somewhat lighter in this latter metal. The rim of the instrument which is applied to the chest-wall is "cross-hatched" in order to prevent slipping and also to diminish the sensation of cold when placed next the skin; a thin rim of some non-conducting material can be fitted to the edge if required, but the author has found this unnecessary in the majority of cases. The collecting tubes are fitted above with short detachable pieces which fit into the rubber tubes; these make the whole stethoscope easy to carry, since the two parts can be readily packed into a small flat case. The metal of which the chest-piece is made is of a thickness sufficient to give a weight which obviates any undue pressure when the instrument is applied to the chest wall, hence errors due to friction are minimised. The chest-piece has been made by Messrs. Mayer and Meltzer of Great Portland-street, London, W.

Cardiff. HAROLD A. HAIG, M.B., B.S. Lond.

THE CRAWFORD CONDENSER.

THIS is an invention for the distillation of water or any fluid, its primary object being to mix with the distillate sterilised air or other gas at a temperature that shall ensure intimate combination. This is effected in the manner shown in the following diagram. A is a vessel to contain the fluid to be distilled, heated from beneath; B a coil of pipe, the lower end of which communicates with the air, or the substitute to be combined with the distillate. The upper end enters the condensing chamber C through the opening E communicating with the boiler A. The contents of the coil are heated approximately to the temperature of the fluid in the boiler; a forced draught can be applied to this coil should such be desired. D is a conical cover fitting over the vessel for the purpose of conducting the vapour through the opening in its apex E into the condensing chamber C. G is an inlet for cold water admitted into the upper chamber for condensation. H the outlet by which the water escapes. I is the orifice for drawing off the resultant liquid. J the funnel for charging the boiler and for gauging the amount of water present. These stills are made of various sizes. The small size is adapted for a dispenser, photographer, or for domestic purposes. A great advantage of the condenser is the thorough aeration of the distilled water by which it is rendered



palatable, and also its simplicity in action. Naturally the patent can be applied to other forms of stills.

The inventor is Dr. A. E. Bredin Crawford of 1, Fourth Avenue, Hove, Sussex.

MEDICINE AND THE LAW.

A Medical Man's Action for Slander.

AT the recent Berks Assizes, before Mr. Justice Bankes and a special jury, Mr. H. S. Challenor, a medical man practising at Abingdon, sued Miss Ann Anson, of Marcham Park, near Oxford, for slander. Miss M. J. Challenor, a sister of the plaintiff, on a date in September, 1910, was travelling to Oxford and occupied a seat in a railway carriage in which were also the defendant, Lady Norman, Lady Norman's son, and his wife. According to the evidence of Miss Challenor, Miss Anson conducted her conversation with Lady Norman in such a manner that it could be heard by the witness, although she was seated in a corner of the carriage remote from the speaker, and in the course of it criticised the medical practitioners connected with the Abingdon Cottage Hospital with considerable freedom. Miss Challenor deposed to having heard the defendant say among other things that she had "looked up" the names of the plaintiff and of another medical man and had been unable to find them in any list, which the witness interpreted as an allegation that they were not qualified medical practitioners. The witness also said that a suggestion was made by Lady Norman to the effect that the cottage hospital was not properly equipped, to which the defendant replied, "I think they are wise not to try operations." Upon this Miss Challenor informed Miss Anson that she was the sister of Mr. Challenor, to which that lady answered, "I beg your pardon, I did not mean anything personal." The defendant denied using the words attributed to her, but in a letter of apology addressed to the plaintiff's solicitor admitted that the Abingdon Cottage Hospital had been the subject of her conversation. In reply to a question asked him in cross-examination by Mr. R. B. D. Acland, K.C., counsel for the defendant, Mr. Challenor said that he brought his action "to stop a woman's tongue," words to which Mr. Justice Bankes made particular reference in summing-up to the jury, saying that in the whole of his professional career he had never heard a better answer given to the question why an action was brought. He had heard this question asked hundreds of times, and witnesses had often shuffled in giving their replies, but the plaintiff had said promptly, "I issued the writ to stop a woman's tongue." His lordship deprecated litigation between persons so situated as the plaintiff and defendant, but referred to the tendency to circulate gossip in a country town or district, and to the necessity for a medical man in such a place to be jealous of his reputation. The jury found a verdict for the plaintiff, with damages one farthing, and similar verdicts, without costs, were consented to in two other actions brought by other medical men in respect of words affecting them and spoken by the defendant upon the same occasion.

THE LANCET.

LONDON: SATURDAY, APRIL 22, 1911.

Shell-fish and Disease.

A VERY comprehensive and highly instructive report upon the relation of enteric fever and gastro-enteritis to the consumption of certain shell-fish has recently been made to the Local Government Board by Dr. H. T. BULSTRODE. As long ago as 1896 Dr. BULSTRODE wrote his well-known report upon oyster culture in relation to disease, and since that time material improvement has been effected in the conditions under which these molluscs are cultivated and prepared for market. But Dr. BULSTRODE is now forced to observe that "notwithstanding such improvement much still remains to be done before the public can consume oysters bought promiscuously with a reasonable degree of safety." The present report relates mainly to mussels and cockles—that is to say, to the molluscs of the poorer classes—and many persons unacquainted with the scale upon which these shell-fish are consumed in some of our large towns will be astonished at the enormous amount collected and despatched to market from all parts of the English and Welsh littoral, as well as from Ireland, Scotland, Holland, and elsewhere. The mussel and cockle industry differs essentially from the oyster industry in that the less costly shell-fish are scattered in a promiscuous manner over the littoral, whereas the oysters are more cultivated and confined to certain definite areas. But there are furnished in the report before us two instructive maps showing the chief localities from which mussels and cockles are gathered, and the localities from which certain of the large towns are supplied. From these maps it is clear, as the author insists, that legislation or regulations to be effectual should comprise, not only England and Wales, but also Scotland and Ireland; and it must, moreover, especially as regards oysters and mussels, take note of the conditions obtaining in Holland, America, and France.

It is by no means an easy matter to bring about the safety of shell-fish beds already exposed to pollution, and we are glad to see that this point is made abundantly clear in the report. Under existing conditions it is possible for large sums to be expended upon sewage purification works and yet for the effluent to contain enormous numbers of sewage bacteria. Even were it practicable at a reasonable cost to efficiently sterilise this sewage in ordinary times, the difficulty of periodic outflows of untreated, although highly diluted, sewage through the storm overflows remains. Dr. BULSTRODE takes his readers upon an imaginary journey around the English and Welsh littoral, and shows them, by means of maps and descriptions in the text, the actual conditions which obtain in every place of importance, with respect to position of the shell-fish and to the methods adopted for storing and cleansing them prior to consumption. In both particulars the revelations made are decidedly disquieting, and there is no shadow of doubt left as to the necessity for legislation and active administrative action. We read, for example, with reference to important mussel and cockle supplies, that although the shell-fish may be collected from localities relatively remote from contamination by sewage, the shell-fish may be brought back and cleansed on shore much too near to the mouths of sewers. With respect to the actual dangers involved by infected shell-fish, Dr. BULSTRODE shows that, except in dealing with definite outbursts of enteric fever such as occurred after the banquets at Southampton and Portsmouth, the testimony is usually of a very circumstantial nature, which only becomes convincing in its cumulative aspects. He furnishes, however, a body of well-arranged evidence which leaves no doubt in the mind of the reader as to the correctness of the inference that both enteric fever and gastro-enteritis are not infrequently caused by the consumption of mussels and cockles eaten raw or imperfectly cooked. Two charts relative to enteric fever in England and Wales from 1870 onwards show that from 1875 to 1885 there was a steady fall in the death-rate from this disease, that between 1885 and 1899 the rate was apparently stationary, while from 1900 onwards there has been a marked decline; and the point which has to be determined is as to the degree of influence which abstention from polluted shell-fish has played in the decline during the present century. Dr. BULSTRODE takes the enteric fever death-rates in two groups of towns: one group in which much attention has been paid to shell-fish and the other in which the question has assumed but little prominence. These several death-rates are afterwards compared in a single table, and it is shown that in many instances in both groups of towns during some period during the years 1898–1902 a decided fall in the enteric fever death-rate occurred which has for the most part been maintained, and this fact is true whichever group of towns is considered. Dr. BULSTRODE regards these declines as provisionally suggesting that in one town shell-fish, in another the abolition of the conservancy method of excrement disposal, and in another the removal of some other cause as yet undetermined, may have been the dominant factor in promoting the said decline, and he regards it as not improbable that in some places, as was presumably the case at Belfast, the enteric fever is being unwittingly maintained by the non-recognition of shell-fish influences. This inference leads him to appeal for more detailed investigation into the history of individual cases of enteric fever, a research which can only in some instances be properly carried out by affording to the medical officer of health more skilled assistance than he has as yet at his disposal. The report also discusses in suggestive fashion the possible influences of shell-fish in maintaining the seasonal prevalence of enteric fever, a subject which is beset with very great difficulties.

This very interesting report is summed up by concluding that so long as existing conditions, both as regards home and foreign shell-fish, obtain, those persons who desire to avoid contraction of enteric fever or gastro-enteritis from this source should either abstain entirely from shell-fish or consume them only after they have been actually at the

boiling point for at least five minutes. It is simply astonishing, after all the public attention which has been drawn to this subject of shell-fish infection, to read in the report before us that at the present time there is practically no adequate control in a sanitary sense exercised over places from which shell-fish are collected or over places wherein they are laid down, washed, or stored; and it is earnestly to be hoped that Parliament, after reading this report and examining the maps which it contains, will at last insist on one or other of the remedies discussed by Dr. BULSTRODE being applied without further delay.

Some Plans for Medical Reform.[1]

IN the rapid economic changes of an age of flux the medical profession is finding itself face to face with problems, and solutions of these problems, which shake its traditional organisation to the foundations. Impending legislation, sooner or later and in some form or another, will deal with some of these problems and will adopt some of the solutions put forward, since both political parties are more or less committed in theory to a reform of the Poor-law, and therefore to immense interference with medical practice as it is. Much earnest thinking is now being employed upon the adjustment of medical service, upon how this can be effected with the least disruption of ancient and cherished ideals, and with the least disturbance of our fundamental professional canons, and in these circumstances every intelligent effort to point out a direction in which order may be restored deserves the close attention of our readers.

The authors of the small books which prompt these words approach the whole matter from different points of view; Mr. COURTNEY BUCHANAN being conservatively inclined, while Professor MOORE'S proposals are radical and destructive. To consider first the smaller work in relation to hospital practice, Mr. BUCHANAN, whose experience in hospital administration entitles him to a respectful hearing, notes that the main point of difference between the Majority and Minority Reports affects the machinery to be introduced, and he makes an attempt to bring into line the functions of the voluntary hospitals as they are now exercised with the recommendations contained in both reports. He insists on the all-importance of "the human factor," both in public assistance and in hospital work, and all his views are based on a continuance of the hitherto existing ideal of the medical profession as ministering to the individual well-being of the poor, either by the relief of occasional distress or by the amelioration of their character and habits, and so of their condition. He confines his inquiry, therefore, to the proposed basis of coöperation between the various State and voluntary agencies for medical assistance, and endeavours to define what should be their respective departments. He foresees that the effect of legislation will be that the response to charitable appeals will grow less and less, and that sooner or later the hospitals, if they are to continue to do the same work, must have some form of State aid or municipal subvention. This prophecy coincides with the views expressed in our correspondence column by "M.B.," writing upon the "trust" danger in charity, for "M.B." points out that the orderly operations of the big hospital funds have adversely affected individual subscriptions to particular charities. Mr. BUCHANAN believes that this coöperation between the State and the voluntary agencies can occur without submitting the voluntary hospitals to State control, which we agree with him in thinking would present many causes of regret. After reviewing the work of the hospitals in regard to in-patients and out-patients, to their classification and general control, to their educational value, as well as to their coöperation with the general practitioner, the public health authorities, the Poor-law authorities, and the ambulance service, he suggests a scheme, the main features of which are that the voluntary hospitals should be controlled by a central council and be reserved for treatment by consultants. All patients should contribute, he holds, according to their means, and a provident dispensary system (which should be a sort of clearing-house for patients or court of first instance) should be introduced and maintained by a public assistance authority; the hospital out-patient departments would thus be used only for consultation purposes between the staff and general practitioners on behalf of their poorer patients. By this means all patients reaching the hospitals would have been previously examined and found suitable cases for hospital care by medical men. A vast amount of clinical material would thus become available for teaching, while the voluntary hospitals would retain their individuality. The central council to control the voluntary hospitals should, he suggests, be elected from the working members of the respective hospital committees and the councils of the great hospital funds, and remain entirely independent of any public assistance and of the Poor-law authority. The council would constitute a separate service, the system of lay secretaries being retained to check extravagance and to preserve order in administration. The work of the hospital, leaving emergencies out of calculation, would be consultative, and the classifying of patients would be done in the provident dispensaries. The hospitals would be kept up to the mark by the council, which should have on it representatives of all professions and be divided up into subcommittees to look after property and finance and catering. Such is a brief outline of Mr. BUCHANAN'S attempt to grapple with the great hospital difficulty, by showing how these voluntary charities might retain their individuality and yet come into closer relation with the public and the general practitioner.

If Mr. BUCHANAN attempts to accommodate existing organisations to the tide of advancing communistic ideals, Professor MOORE will have none of these compromising methods. He advocates the extermination of our present systems of medical aid altogether. The problems of disease, he thinks, require to be tackled, not so much by medical men as by statesmen or economists. He demands a disciplined army to fight disease, stating that the

[1] The Function of the Voluntary Hospitals in Relation to the Proposed Public Assistance Authority. By J. Courtney Buchanan, of Lincoln's Inn, Barrister-at-Law, &c., Secretary of the Metropolitan Hospital, London. Second edition, revised and enlarged. London: The Hospital Gazette. 1911. Pp. 74. Price 1s. net.

The Dawn of the Health Age. By Benjamin Moore, M.A., D.Sc., M.R.C.S. Eng., L.R.C.P. Lond. London: J. and A. Churchill. Liverpool: The Liverpool Booksellers' Co., Limited. 1911. Pp. vii.-204. Price 3s. 6d. net.

lives of 32,000 medical men in Great Britain are wasted because their energies are misdirected. The medical profession through the ages has developed, says Professor MOORE, upon lines of tinkering instead of upon those of prevention; and it is impossible for it from within to organise itself into an army of health and public safety against disease, to hunt down disease at its source, and proceed to its eradication in a scientific way. Even should the profession set about reorganising itself on new lines, he considers that it lacks those effective compulsory powers of dealing with disease which can be given only by legislation. Regarding the present public health service, where medical effort in certain directions is backed by legislation, the author points out the inadequacy of a system that is content with one medical officer of health to prevent disease ravaging a town of, say, 300,000 people, even though he gives his whole time to it; he finds the medical officer of health "simply an administrator of an ill-assorted collection of laws, some good and others bad and incomplete," while he is particularly hard upon the working of the existing methods for the notification of infectious diseases. He further points out that the present voluntary hospital system is over-estimated as to its capacity, as it cannot accommodate more than from 15 to 20 per cent. of existing cases, while he points out that there is no real reason why the Poor-law infirmary clinical material should be lost to teaching, or why the amenities in the infirmary should be so far below the voluntary hospital standard. The voluntary system he calls an exotic that cannot be made to grow indefinitely and cover the field, while it blinds our eyes to the fact that the Poor-law system is a failure. He would therefore unify all hospitals, voluntary and otherwise, and place them under the direction and control of a national medical service, and on no account under municipal or local control, still less under that of the friendly societies, which, in his opinion, have nearly made shipwreck of the German State insurance scheme.

It will be seen that both authors go over well-trodden ground, and divergent entirely as are their points of view, both contrive to recommend many things upon whose value we are all agreed. So we recommend the perusal of both books very sincerely to our readers, who ought to be getting ready with their opinions as to the fittest way in which the new legislation, probably imminent, will meet the national needs in the matter of medical service. The condition of reform which Professor MOORE holds to be necessary—viz., a radical and complete change in the whole aspect and outlook of the Government, the public, the private medical practitioner, and the health officer—will not be accepted by the medical profession as necessary in the least. What is required is, indeed, as Professor MOORE says, an organisation that shall include in organic coördination the private practitioner, the hospitals—both voluntary and Poor-law—and their staffs, the infectious diseases and municipal hospitals and their staffs, the dispensaries, the district medical officers and relieving officers, and the present State service; this, however, should be obtained, if possible, not as Professor MOORE insists by an entirely new system, but by the very course that Professor MOORE repudiates—viz., an extension and amplification of existing systems. For this purpose a national health service on military lines would act only in a manner that would be unpalatable to the medical profession and the public alike. The establishment of such a service would cost the country a vast sum. It is possible that this money is all paid now, and more than paid, in medical attendance, support of hospitals, and the economic losses occasioned by illness; Professor MOORE is probably quite right in estimating the national expense of illness and its treatment to be colossal. But to divide this aggregate sum up between seniors and juniors in the medical profession in the way that the sum at the disposal of the State for the payment of military officers is divided up seems to us to be practically impossible. None the less the ventilation of such views, leading as they do to thinking about the fundamental issues, serves good purpose.

The International Conference on Cancer Research.

THE present status of the cancer problem is very clearly brought out in the recently published report of Dr. E. F. BASHFORD, the delegate of the British Government to the Second International Conference on Cancer Research, held in Paris in October last. The report is only a preliminary one, made in view of the announcement that a meeting will be held in May, at the opening of the International Hygiene Exhibition in Dresden, to arrange for another Conference at Brussels in 1913. A supplementary report, if need be, is promised after the appearance of the full official report of proceedings at Paris. The scientific proceedings of the Conference were divided into the following sections: (1) Histology and Histological Diagnosis; (2) Statistics; (3) Clinical Diagnosis; (4) Treatment; (5) Etiology and Experimental Pathogenesis; (6) Comparative Pathology. Under the first head the discussion dealt with the inconveniences of divergent nomenclature, different terms being used in different countries for identical conditions, and the same term being sometimes used for different conditions. To obviate this difficulty, the Conference adopted a resolution to appoint a commission, representing different countries, to draw up an international nomenclature for submission to the Conference in 1913. A recommendation in the section of statistics to appoint a similar commission to compile comparable international statistics of cancer, failed of acceptance, in view of the wide divergence of opinion concerning the value of the methods of taking a "cancer census" hitherto in use.

The consideration of the duration of cancer of the digestive tract brought out the fact that a long period of latency frequently preceded the discovery of the disease by the first recognisable symptoms. Papers on clinical diagnosis and the chemistry of cancer left the impression that changes in the blood were not to be relied on, and could not replace the older diagnostic methods, with all their shortcomings. The importance of arousing, not only the lay public, but the medical profession also, to the need of early diagnosis was insisted on. Besides surgical treatment the value of various adjuvants—fulguration, X rays, and radium—was discussed. The consensus of opinion was against

fulguration; as to the value of radium no conclusion was arrived at; and the treatment by sera and vaccines was regarded as not to be relied on. The phenomena of induced resistance to inoculation of the growth in animals gave rise generally to optimistic interpretations of its significance—viz., that fresh animals reacted against the implantation of cancer and set up an active resistance to its growth in them. A claim was made by one speaker of a curative action for the serum of animals that had been rendered resistant to cancer; while another speaker claimed to have shown that the repeated inoculation with healthy human tissues caused disappearance or reduction in size of true malignant new growths in man. On the causation of cancer—infection or biologic alteration of tissue proper to the individual—opinions were divided. A most interesting series of papers was those relating to the occurrence of cancer in the lower animals and in plants. The most important of these papers showed that certain tumours occurring in sugar beets and allied plants could be grafted on other beets of the same and of different species. It appeared justifiable to assign to these vegetable tumours a position analogous to that occupied by cancer in the animal world. No causative parasite could be discovered in them. The President of the Conference, at the closing ceremony, expressed a hope that the organisation of the International Association would be modified before the next Conference in regard to certain matters that militated against the adhesion of Great Britain and other countries, especially with regard to the imposition by the organisation of methods of statistical observation, the value of which was disputed.

In our opinion the facts that the delegates were divided on such fundamental matters as the etiology of cancer, and what constitutes a legitimate application of statistical methods to the question of the frequency of cancer, together with the refusal of the Conference to support the recommendation for a commission to compile comparable international statistics of cancer, go far to demonstrate the wisdom of the decision arrived at in this country in 1902–03 not to adopt the so-called "cancer census." In the present varied condition of vital and mortality statistics in different countries a "cancer census," such as is proposed, so far from avoiding the fallacies inherent in all statistics of cancer mortality would only exaggerate them. In the existing divergent state of opinion it appears futile to look for an international crusade against cancer on concerted lines similar to those crusades at present being so successfully waged against tuberculosis and leprosy. We take this opportunity of expressing to Dr. BASHFORD our congratulations on his well-deserved good fortune in obtaining the Walker prize of £100 of the Royal College of Surgeons of England for his investigations into the pathology and therapeutics of cancer.

TRACHOMA IN ENGLAND.—Mr. Winston Churchill has replied to a question by Mr. Houston, that he knows of no increase of trachoma in England, though it is somewhat prevalent among aliens, though alien immigrants can be, and are, refused admission when found to be so suffering. He sees no reason for further legislation on the matter.

Annotations.

"Ne quid nimis."

NATIONAL HEALTH PROMOTION AS A MEMORIAL TO KING EDWARD VII.

THE National League for Physical Education and Improvement has put forward a scheme for the erection of a public health museum as a memorial, or part of a memorial, to the late King Edward. The Lord Mayor of London, as chairman of the London Memorial Committee, has, we understand, consented to submit the scheme to his committee for consideration, and we feel sure that such a proposal will have the sympathy of that committee, for no king ever had more at heart the health of the nation which he governed than Edward VII. Moreover, the scheme is one which could be easily associated with that of an Imperial Institute of Hygiene and Tropical Medicine, which is already under consideration. Briefly, it is proposed to construct a museum that will accommodate a permanent collection and at the same time be capable of furnishing duplicate material for the equipment of travelling vans and for the use of lecturers. The site suggested (in order that the museum may be accessible for the greater and poorer masses of London residents) is Kingsway, and the name of the thoroughfare is a felicitous one. It is also suggested that the building should form a nucleus for the coördination of the various health-promoting institutions, both metropolitan and national. As an example of the kind of museum contemplated by the league the Museum for Instruction in Workmen's Welfare (*Arbeiter-Wohlfahrts-Einrichtungs-Museum*), established more than ten years ago at Charlottenburg, may be mentioned. This contains examples of machinery used in factories with devices to guard against accident; working models of mines with ventilating and sanitary apparatus; housing and town-planning models; charts, diagrams, pictures, specimens, and models illustrating the ravages of tubercle and alcohol, and the commoner causes of disease and the means and apparatus for prevention. This museum is closely connected with the workmen's insurance organisation, and is largely supported by the workmen's associations, which send working men there for courses of three weeks' instruction. In a letter signed by the Bishop of Ripon, chairman of the Executive Council, and Lord Alverstone, chairman of the London Branch Council of the National League, which has been forwarded to us, members of the medical profession who are in sympathy with the scheme are invited to send their names to the secretary of the League at 4, Tavistock-square, London, W.C.

CRYSTALS.

CRYSTALS, in the various forms they are presented to us, are very fascinating, and it is a remarkable and disappointing fact that the workers in the field of crystallography have been, and are, a comparatively small band. But the small band is fortunately an energetic one, and its members have done splendid work. Wollaston invented in 1809 the reflecting goniometer, and Professor W. H. Miller of Cambridge in 1839 advanced the study of the subject very materially when he founded his method of describing crystals, giving the line of experimental work which is followed at the present time. One of the most ardent and successful workers on the subject now is Mr. A. E. H. Tutton, who has contributed some thoughtful and charming papers on the subject, and whose recent book presents the phenomena of crystallography to the general public in a manner

which can be comprehended by all.[1] It is a remarkable fact, as Mr. Tutton points out, that no definition of life has yet been advanced which will not apply to a crystal with as much veracity as to those obviously animate objects of the animal and vegetable world which we are accustomed to regard in the ordinary sense as "living." A crystal grows, he tells us, when surrounded by a suitable environment capable of supporting it with its natural food—namely, its own chemical substance in the liquid or vaporous state or dissolved in a solvent. Moreover, when a crystal is broken and then surrounded with this proper environment it grows much more rapidly at the broken part than elsewhere, repairing the damage done in a very short space of time and soon presenting the appearance of a perfect crystal once more. Herein is a genuine analogy to certain processes in animal tissue, the remarkable recuperative power of which after injury, exhibited by special growth at the injured spot, calls forth our admiration. The virility of the crystal again is marvellous. A crystal of quartz, for instance, detached during the course of disintegration of the granitic rock of which it had originally formed an individual crystal, owing to denuding influences at work in nature thousands of years ago, subsequently knocked about the world as a rounded sand grain, blown over deserts by the wind, its corners rounded off by rude contact with its fellows and subjected to every variety of rough treatment—after all this it may eventually find itself in our own day in water containing in solution a small amount of the material of which quartz is composed, silicon dioxide. No sooner is this favourable environment for continuing its crystallisation presented to it than, however old it may be, it begins to sprout and grow again into beautiful hexagonal prisms terminated by the well-known pyramid structure. This is but one example of the stories about crystals and their conduct which Mr. Tutton tells us in his most interesting book. We feel that the author's appeal for more workers in this field will succeed if what he writes about the subject is attentively read.

THE NATURE AND DISORDERS OF CONDUCT.

THE field of medicine has always theoretically embraced all things bearing on the welfare of the human race, but never more widely or more definitely so than at the present time, when it is becoming not only generally admitted, but systematically acted on, that prevention is better than cure. Hence to-day heredity, habits, and environment, from which arise the influences that cause disease and degeneration, are receiving careful study. It is only natural, therefore, that conduct, which is the reaction of the individual to these influences, should receive special attention. For this reason the course of six lectures on Conduct and its Disorders, announced for delivery on Fridays at 5 P.M. (beginning May 12th) at University College, Gower-street, London, by Dr. Charles Mercier, physician for mental diseases at Charing Cross Hospital, is worthy of a good attendance at the hands of the medical profession. The syllabus of the lectures is as follows:—Conduct: Its kinds—vital and non-vital; its disorders—defect, excess, perversion, reversal. Vital conduct: Self-preservative: Primary—avoidance of injury; action towards antagonists; cleanliness; prehension of food; use of stimulants. Self-preservative: Secondary—earning of livelihood; administration of means. Social conduct: elicited—conduct as influenced by the existence, presence, attention, esteem, approval, liking, will, example, and action of our fellows. (The social instinct; social inhibition; shyness; pride, vanity, and ambition; elicited morality; suavity; leading and subordination; custom and fashion, &c.) Social conduct: Spontaneous — patriotism, philanthropy, beneficence, and their opposites; spontaneous morality, passive and active. Social-racial conduct—chastity, modesty. Family and racial conduct—courtship; jealous conduct; marital conduct; parental and filial conduct. Non-vital conduct—recreation; æsthetics; investigation; religious conduct. No fee is required for attendance, but cards of admission must be obtained by application, stating qualifications, to Mr. Walter W. Seton, M.A., secretary, University College, Gower-street, London, W.C. Until recently the study of conduct, as the science of ethics, has been left almost entirely in the hands of students of philosophy; the evolution of biology, however, has tended to bring conduct more and more into the domain of science, and it is now possible for the physician to investigate and correlate the influences of will, emotion, impulse, reason, and instinct, of which conduct is the outcome.

[1] Crystals, by A. E. H. Tutton, D.Sc., M.A. (New College, Oxon.), F.R.S. With 120 illustrations. London: Kegan Paul, Trench, Trübner, and Co., Limited. 1911. Pp. 301. Price 5s.

THE FIRST OPERATION UNDER ETHER IN EUROPE.

ONE of the most dramatic scenes ever enacted in which medical men grouped the stage has been recently described by Dr. F. William Cock in the *University College Hospital Magazine*. It is the account of the first capital operation performed in Europe when the patient had been rendered insentient by inhaling ether vapour. The story, striking enough in itself, for it tells of the realisation of what surgeons had vainly sought since surgery existed, has the added attraction that the compelling personality of Liston enhanced the interest of the occasion, while Dr. Cock's restrained, but vigorous, writing invests the narrative with due fascination. Dr. Cock tells us that Robert Liston had learnt from Dr. Boott, a general practitioner of Gower-street, that a successful trial of ether for a dental operation had taken place in his house on Dec. 19th, 1846. Liston at once sought the aid of Mr. Peter Squire, the well-known chemist of Oxford-street, and asked him to evolve an apparatus for administering ether. This was for use on the following Monday, Dec. 21st, for a patient in University College Hospital. Peter Squire accepted the challenge, and at the suggestion of his nephew, William Squire, the ether inhaler, when put together, was tried upon the nephew. It was William Squire who administered the ether to Liston's patient, profiting by his personal experience. The quaint operating theatre in the old hospital is crowded and William Squire essays to test his ether inhaler on some volunteer patient. This is 1 P.M.; as no willing student presents himself a hospital porter is commandeered and the experiment proceeds. Rendered excited but not anæsthetised, this man leaps from the operating table and runs amok through the audience of students, and is only secured just in time to save a worse happening. He is led away muttering that he would take no more of the "d——d stuff." At 2.15 Robert Liston enters, "that magnificent figure of a man, 6 ft. 2 in. in height." "We are going to try a Yankee dodge to-day, gentlemen, for making men insensible"—so Liston introduced ether to a London hospital. Dr. Boott had told Liston of Dr. Bigelow's account of Warren's trial of the anæsthetic at the General Hospital, Boston, Massachusetts, at the instance of Morton, himself one of the pioneers of this epoch-marking discovery. All is ready; Liston nods to his house surgeon, Ransome, who despatches Edward Palmer, the dresser, to bring in the patient from Ward I. The man is a butler, aged 36; he has a disorganised knee-joint and diseased tibia, and it is decided that the thigh must be amputated. William Squire places the mouth-piece between the lips of the man and clips

his nostrils while ether is poured on the sponge in the Nooth's apparatus. Without a groan or a struggle the patient sinks into insensibility. "Liston stands by, trying the edge of his knife against his thumb nail." William Squire looks at Liston and says, "I think he'll do, sir." William Cadge, Liston's junior, who became in later years one of the most distinguished of the hospital's pupils, is told to take the artery. Ransome, the house surgeon, holds the limb. "Now, gentlemen, time me," says Liston, and his knife flashes round the limb, deftly fashioning the flaps; then it is exchanged for the saw, and the amputation is complete. The time record is variously given—28 seconds, says Squire; 27 seconds according to Buckell, a whilom student who still survives; 26 seconds is called by "yellow-haired Russell Reynolds"; but 25 seconds by Palmer, the dresser, and upon him the great man smiles. The inhalation had been stopped as the operation was commenced, and the handkerchief which had been laid over the face is now removed. The patient tries to lift himself, and cries out, "When are you going to begin? Take me back, I can't have it done." He is shown the elevated stump, drops back, and weeps a little; he is taken back to bed to make a recovery, perfect if tedious, as recoveries were wont to be in the days before the voice of Lister had been heard in the land. Liston utters this epilogue thus: "This Yankee dodge, gentlemen, beats mesmerism hollow." Dr. Elliotson had been, of course, a physician in University College to within a few years of this time, and so Liston's bitter comparison is given with a spice of sarcasm. The notes of this case taken at the time are extant, and we read: "Not the slightest groan was heard from the patient, nor was the countenance at all expressive of pain. This was the first capital operation which had been performed under the narcotising influence of ether vapour and it was perfectly successful." The facsimile of Palmer's neat caligraphy and the portraits of Liston, Cadge, Squire, as well as diagrams of the apparatus, the operating table, and other details are given by Dr. Cock and bring the historic scene before one with an intense reality. Had the drug failed, as nitrous oxide had seemed to fail when publicly tried by Horace Wells in the General Hospital at Boston, perhaps Liston might have echoed the angry cries of the students when they shouted "humbug" to poor Wells and broke his heart. Another scene, this time enacted after Liston's acceptance of anæsthesia, is the experiment of Simpson with chloroform in his own house. The details cannot be here rehearsed, although they are scarcely less thrilling. The net result of these happenings in 1846 and 1847 we know, and realise the part they played in the marvellous development in operative procedure which is our commonplace to-day. How far the modern feats are from the utmost possible attainment of even such giants in surgery as were Liston and Ferguson and those of their generation Dr. Cock reminds us, adding that within a year of the event chronicled Robert Liston had passed from life, dying at 53, as a result of an aortic aneurysm attributed in origin to a blow from the boom of his yacht. "Of him, truly may it be said: 'Ante diem periit, sed non sine gloriâ.'"

ANKYLOSTOMIASIS IN FLORIDA.

WE have received an interesting publication from the State Board of Health of Florida entitled "Hookworm Disease: A Handbook of Information for all who are Interested," prepared by Dr. Hiram Byrd, assistant State health officer. It contains a large amount of valuable information, written in clear and simple language in order to be intelligible to the public as well as to medical practitioners. It is of considerable interest in connexion with the prevention and cure of ankylostomiasis, upon which we wrote in a leading article in THE LANCET of April 1st, referring to Dr. A. E. Boycott's Milroy lectures. It is stated in the preface that the book is primarily intended for teachers, who have taken an active part in the campaign against the parasite in the State of Florida. In common with other southern States, Florida is sorely infested with the hookworm, and it is proved now to demonstration that this parasite is responsible for widespread disease and poverty among the population, more especially in rural districts, where the disposal of sewage is in a very primitive state. In some families Dr. Byrd points out that poverty reigns supreme, for the disease renders the members unable to work, and therefore unable to afford shoes. A vicious circle is set up. The hookworms augment the poverty, and the poverty increases the infection with the parasites. The State Board of Florida has started an active crusade against the hookworm, and Mr. J. D. Rockefeller has given a large sum of money to organise a sanitary commission with the object of eradicating hookworm disease in the southern States. The diagnosis of the disease is carried out free at the State laboratories. If a specimen of fæces from a suspected case is sent to the State Board of Health at Jacksonville a careful search is made for the ova of the parasite. In 1908 Dr. Byrd delivered an address on the subject of this disease before the State Teachers' Association and successfully enlisted their sympathies. In 1909 an active campaign was organised. Special medical officers went through the State, county by county, distributing information in regard to the disease, treating occasional cases for purposes of demonstration, and handing over others to be treated by the family medical practitioner. The State Board also undertook to pay the family attendant for the treatment of indigent sufferers from the disease, giving a fee of $3 to cover both advice and medicine. The conditions attaching to the payment of these fees were the following. The diagnosis must be confirmed by one of the State laboratory workers, not less than three courses of thymol must be administered and each be confirmed by laboratory examination of the stools, and the history of the case must be recorded upon a case record sheet. In addition to the description of this attempt to eradicate the disease, Dr. Byrd's book gives an interesting account of the parasite, its life cycle, the modes of infection, the methods of diagnosis, and the treatment of the disease. The State Board of Florida is to be congratulated upon the enlightened and practical manner in which it is attacking this difficult problem, and Dr. Byrd deserves much credit for the interesting book he has prepared as part of this crusade.

THE TOXICOLOGY OF FILIX MAS.

A. Magnus-Levy records, in the *Berliner Klinische Wochenschrift* of March 27th, a curious and apparently unique case of poisoning by extract of male fern. The victim, a man aged 38 years, had never suffered from any serious illness; he had led a temperate life; and there does not seem to have been any injury. For about a year before the mishap now reported he had been troubled by pain in the left foot and lower thigh, provoked by exertion and standing—not, however, sufficient to interfere with his military duties. On Sept. 12th, 1910, at 7 P.M., he took a dose of what appears to be a proprietary mixture containing one part of extract of filix mas with two parts of castor oil; loose motions followed two hours later, and vomiting shortly after that. Soon after midnight he was waked from sleep by severe cramp-like pains in the left hamstring region; the knee was flexed and could not be straightened, the foot and toes were paralysed. This was soon followed by convulsive movements in the right leg and in both arms. The urine was thick, and

when examined a day or two after contained albumin and other evidences of renal irritation. Two days later the skin on the left shin became red, with blue spots. After six weeks in bed the toes had become dark red, felt numb, and remained powerless and stiff; the left knee was moveable, but had to be straightened by force before he could get up. When examined in December, 1910, he was found to present the earliest evidences of arterio-sclerosis, but no other signs of disease apart from those in the left lower limb. Here there was a bluish-red discolouration, most intense in the foot and fading away into normal skin above. The foot was very cold and arterial pulsation was less definite on the left than on the right side; there was no gross alteration of sensibility. Certain of the muscles below the knee were wasted, and their reaction to direct electrical stimulation was diminished. This state of affairs is to be referred, in Magnus-Levy's opinion, to a double lesion: changes in the anterior cornual cells of the spinal cord, with sclerosis of the arteries supplying the lower limb. The spinal lesion he refers to arterial spasm and not to direct action of the poison on the cornual cells themselves. The acute arterio-sclerosis is, in like manner, due to spasm of the vasa vasorum of vessels already diseased, though in a minor degree. In support of this ingenious hypothesis he brings forward clinical and experimental evidence which goes to show that the predominant feature of the action of male fern in toxic doses is arterial spasm. There is one important omission in this record: we are not told whether the tapeworm (on whose behalf this unfortunate dose was taken) duly made its appearance. The condition of the leg improved under treatment with potassium iodide.

THE WEATHER OF MARCH AND EARLY APRIL.

THE climate of this country during last month was determined by two distinct currents of wind. Until after the first fortnight the general direction was from west and south-west, varied occasionally by a shift to south, and more often by a veering to north-west. The last fortnight, on the contrary, was almost uninterruptedly governed by winds from some point of the compass between north and east. The first current brought more or less rain nearly every day to the northern and western parts of the kingdom, but several fair, dry days to the south and east, while with the colder current there was very little rain in Ireland, Wales, the western counties of England, and in Scotland, but rather frequent, although not heavy, falls in the east and south. In some districts in Ireland, Scotland, and Wales there was scarcely a drop of rain during the entire fortnight. The first few days were mild, and there was a temporary burst of mild weather in the south and south-east of England on March 21st and 22nd. During the month as a whole, however, the temperature was rather below the normal than above it, in spite of the fact that sharp frosts were extremely rare in all parts of the kingdom, and quite absent from several districts. It is certainly fortunate that the temperature was not high enough to hasten the growth of vegetation, as the abnormal cold and the cutting east and north-east winds, with their snow squalls, which became general soon after the advent of the present month, would have wrought immense damage to fruit blossoms and all other tender growths. The sunshine, like the temperature, did not diverge greatly from the average, but it was below it over the larger portion of the kingdom. In the metropolitan area there were only about 10 hours less than the normal, the figure varying from 82 hours at Hampstead and 76 at Greenwich to 60 at Westminster and to 52 in the City. On 15 days the sun either failed to shine altogether or did so for less than an hour, and even at the brightest spot, Hampstead, there were no less than nine days quite sunless. March of last year, it will be remembered, was dry and phenomenally bright. London had more than an hour per day in excess of the normal, and the south-west and south coasts about two hours; this year, however, the extreme south-west coast of England was mulcted in about one hour per day. In the Mediterranean region there was little remarkable in the weather conditions. The temperature, while as a whole it underwent an increase as the month progressed, was subject to many fluctuations, and all districts were at times under the influence of very strong winds. The Riviera was finer and drier than Italy, and generally warmer, the shaded thermometer rising to 60° and above pretty frequently, although on some days it remained below 50°. The advent of spring was more noticeable on the coast of Algeria than elsewhere, and to a lesser extent in the islands of Sicily and Malta. In those regions the thermometer touched the 70° mark on a good percentage of days, and more than once nearly reached the 80° mark. Biarritz experienced in March several cool and rainy spells, and, even when it was bright, afternoons with a temperature of 60° or higher were less frequent than usual at this time of the year. As regards the month of April, this month, as is well known, can play the part either of early summer or the middle of winter, although it is certain that such severe weather as that during the opening week of the month rarely occurs. It could, of course, only happen with a strong current of wind from the north-east, and only then when the air in Northern Europe is cold for the time of year. Colder nights than those of this dreadful week are sometimes experienced in April much later in the month, and there are many instances of much heavier falls of snow after the 20th. But the distinguishing feature of the case in question was the abnormally low temperature of the days over the southern and south-eastern counties of England. Over a large area the thermometer barely exceeded the freezing-point for about 48 hours, and some of the resorts on the south coast were among the chief sufferers. It is rare even in mid-winter for the temperature to remain at such a low figure throughout the day, and the sensation of cold was greatly accentuated by the piercing wind. The splendid Easter has, however, by this time driven the recollection of the opening week of April from our minds.

THE MOSQUITO PLANT.

SOME persons hold a strong opinion regarding the value of certain plants in repelling mosquitoes, and in this way preventing the transmission of malaria. There is no doubt that some powerful odours are repugnant to insects, and not long ago garlic, for example, was thought to possess some prophylactic qualities, since mosquitoes were said to refrain from biting those who smelt strongly of that odoriferous plant. It is also stated by some authors that persons who regularly consume a decoction of lemon-peel, which imparts a peculiar odour to the skin and its secretions, escape the bites of insects, which dislike the smell of the skin in such cases. Some trees, shrubs, and plants, such as the various kinds of eucalyptus, the castor-oil plant, and citronella, have a certain reputation for preventing malaria, the suggestion at one time being that this was due to the "balsamic exhalations" which they emitted. More recently the beneficial influence of eucalyptus has been ascribed to the fact that it is a rapidly growing tree capable of absorbing much moisture from the ground, and in this way drying the soil around it. Some eight years ago, in a letter to the *Times*, Major H. D. Larymore, R.A., an officer in the West African Political Service, drew attention to the peculiar properties of "the mosquito plant," a species of basil, Ocymum viride, natural order Labiatæ, in repelling mosquitoes and alluded to its uses in the prevention of

malaria. His views were at the time supported by Sir George Birdwood, formerly professor of materia medica and botany in the Grant Medical College, Bombay. On the other hand, another distinguished botanist, Sir W. T. Thiselton-Dyer, denied the alleged virtues of the plant, and in this opinion he was upheld by Dr. W. T. Prout, who had seen considerable service in West Africa, and carried out a number of experiments with the leaves of the basil plant and mosquitoes. Dr. Prout's conclusion was that the value of the Ocymum viride in malarious countries was nil. Quite recently Major Larymore, in the columns of the *Times*, again supported by Sir George Birdwood, returns to the charge and once more sets out the virtues of the "mosquito plant," stating that during ten years' service in West Africa he has, at each station where he resided, sown the seeds of the basil plant, and to this he attributes the freedom which he and his wife have experienced from attacks of "fever" during that period. He further draws attention to an analysis made at the Imperial Institute laboratory by Dr. Goulding, D.Sc., showing that the leaves of this plant yield a volatile oil which contains 32 per cent. of thymol as well as other aromatic substances. The peculiar properties of the Ocymum viride, are, therefore, believed to be due to the thymol given off by the leaves. If it could be shown that the odour emitted by these leaves invariably repelled mosquitoes, or that the placing of a pot or two of basil beside the bed of the sojourner in the tropics would save him from being bitten in the night by bloodthirsty anophelines, or that the sowing the garden around the house with seeds of the basil plant would keep mosquitoes from entering the compound or dwelling, we would then be able to congratulate ourselves upon being on the way to a simple solution of the difficult and costly question of the prevention of malaria. It would then be no longer necessary to undertake major works of drainage or to organise mosquito brigades. But the solution, we fear, is neither so easy nor so simple as Major Larymore would have us to believe. The evidence so far, though supported by so eminent and so learned a man as Sir George Birdwood, is not sufficiently convincing. There is, moreover, the danger that some persons, influenced by the views put forward, may be induced to neglect the better-tried and more trustworthy methods, which include quinine prophylaxis and the mosquito net, and may also be led to desist from their efforts for securing destruction of mosquitoes and their breeding-places.

URBAN MORTALITY IN THE UNITED KINGDOM DURING LAST QUARTER.

UNTIL the results of the recent Census are available doubt as to the accuracy of urban population estimates detracts from the value of vital statistics for individual towns. The official statistics, however, of the 77 largest towns in England and Wales, in the aggregate, with an estimated population of rather more than 17,000,000, may be accepted as approximately trustworthy, since the undoubtedly over-estimated populations of many of the towns may probably be, to a great extent, balanced by an under-estimate of the populations of some of the other towns, in which the rate of increase since 1901 has exceeded the known rate that prevailed between 1891 and 1901. The 13 weekly returns issued by the Registrar-General during the first quarter of this year show that the calculated mean annual rate of mortality during the quarter among the population of these 77 large towns was equal to 15·8 per 1000, showing an excess of 1·0 per 1000 upon the rate that prevailed in 76 of these towns during the corresponding quarter of last year; it was, however, 1 8 below the mean rate in these towns during the corresponding quarters of the four years 1907–10. In London last quarter the recorded annual death-rate, calculated on an estimated population little short of 5,000,000, was also equal to 15·8 per 1000, corresponding with the mean rate in the aggregate of the 77 largest English towns. The fatal prevalence of measles in many of the 77 towns (especially in London, Sheffield, Plymouth and Devonport, Wigan, Middlesbrough, and Coventry) was a notable feature of the urban mortality statistics during the past quarter, causing 4046 deaths, against an average of 1980 in the four preceding corresponding quarters. Notwithstanding the general prevalence of measles, a disease mainly fatal among young children, the rate of mortality of infants under one year of age in the 77 large towns last quarter did not exceed 115 per 1000 registered births, corresponding with the decreased rate that prevailed in the first quarter of last year; it was, moreover, 10 per 1000 below the average rate of infant mortality in the same periods of the four years 1907–10. In the eight principal Scotch towns for which weekly returns are published, having an estimated population of somewhat less than 2,000,000, the annual death-rate during last quarter was equal to 16·8 per 1000, and exceeded by 1·0 the mean rate during the same period in the 77 English towns. The 22 town districts of Ireland, for which official returns are issued, contain an estimated population somewhat exceeding a million, and include 16 small towns with populations under 20,000. The annual death-rate in these 22 Irish towns during the past quarter was equal to 20·5 per 1000; this rate exceeded by 4·7 the mean rate during the same period in the 77 English towns, and by 3·7 the mean rate in the eight principal Scotch towns. There seems to be no sufficient ground for doubting that this marked excess of mortality in the Irish urban population is mainly due to defective sanitary organisation and administration. The contrast between the mortality statistics of London and Dublin is specially noticeable; the reported death-rate in London during last year did not exceed 12·7 per 1000, whereas in Dublin it was equal to 19·9; this signifies that, in equal numbers living, 157 deaths occurred during last year in Dublin, to each 100 recorded in London. These facts seem to call for action by the Local Government Board for Ireland.

ON Tuesday next, April 25th, at 5.30 P.M., at 15, Cavendish-square, London, W., the Medical Section of the Royal Society of Medicine will hold a discussion on the After-History of Cases of Albuminuria occurring in Adolescence, to be opened by Dr. J. F. Goodhart. Among those who have promised to take part in the discussion are Dr. S. West, Dr. N. Tirard, Dr. R. Saundby, Dr. Clement Dukes, Dr. W. P. Herringham, Dr. J. S. Collier, Dr. W. Hale White, Dr. W. Armstrong, and Dr. A. E. Garrod.

THE opening of the Research Institute of the Cancer Hospital, Fulham-road, by H.R.H. the Duke of Connaught, K.G., is announced to take place on Thursday, April 27th, at 3 P.M.

THE MILLER GENERAL HOSPITAL.—A special matinée in aid of the funds of the Miller General Hospital for South-East London has been organised by Mr. W. Scott-Scott. This will take place on May 12th next at the Playhouse, Northumberland-avenue, which has been lent for the purpose by Mr. Cyril Maude, and among those who have promised to give their services are Lady Tree and Mr. Ben Webster in *A Debt of Honour*; Mr. Laurence Irving and Miss Mabel Hackney in *The Dog Between*; Mr. Edmund Gwenn, Miss Lena Ashwell, and Miss Barton in *The Twelve Pound Look*; Mr. Dawson Milward and Miss Lilian Braithwaite in *The Philosopher in the Apple Orchard*; Miss Ellis Jeffreys in *The Lesson of a Fan*; Mr. Harry Tate in his sketch *Golfing*; and the Gaiety Chorus, by kind permission of Mr. George Edwardes. £5000 a year are required to carry on the work of the hospital, but the assured income is less than £500.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

ELECTION OF PRESIDENT.

A COMITIA was held on April 10th, Sir THOMAS BARLOW, Bart., K.C.V.O., the President, being in the chair.

The PRESIDENT delivered the annual address, in the course of which he recounted the salient facts in the history of the College during the last 12 months. He referred to the Royal honours and distinctions which had been conferred on Fellows, Members, and Licentiates, making special mention of the title of Baron conferred on Sir W. B. Foster (now Lord Ilkeston). The scholarships and prizes granted during the year were detailed, and reference was made to the Harveian oration and the lectures which had been delivered before the College. The College appointments also received notice, especially that of Dr. Norman Moore as Harveian librarian in succession to the late Dr. J. F. Payne. The President made some important remarks on the question of the University of London. He considered that all students should be encouraged to pass the matriculation of that University, or one of its equivalents, and that no consent should be given to any proposal to lower the standard of the entrance examination. He believed that the final Conjoint examination was as thorough and searching as any in the kingdom, and he thought it would be a valuable regulation if every student was compelled to pass it, thus forming a decided step towards a one-portal system. He then read obituary notices on those Fellows who had died during the year: Walter Butler Cheadle, John Anderson, Sidney Ringer, Joseph Frank Payne, and James Edward Pollock. The TREASURER (Sir Dyce Duckworth) proposed a vote of thanks to the President for his address and asked permission for it to be published. This was seconded by the SENIOR CENSOR (Dr. Frederick Taylor) and carried. The PRESIDENT replied and then vacated the chair.

The election for President then took place, when Sir Thomas Barlow was re-elected, receiving 90 votes out of 93.

The Senior Censor then delivered to the President the insignia of office, and the President gave his faith to the College and thanked the Fellows for the honour they had conferred upon him by re-electing him.

On the motion of the TREASURER, seconded by Sir JOHN BROADBENT, it was resolved that a committee should be appointed to make arrangements for a suitable stand for viewing the Coronation procession on June 23rd.

A report dated Jan. 17th from the Committee of Management was read and adopted. The report contained: (1) certain recommendations in reference to the examinations in pathology for the Conjoint Diploma; and (2) the recognition by the Conjoint Board of the University of Bristol. A second report, dated March 7th, was also read and adopted, which recommended that Malvern College should be added to the list of institutions recognised by the Examining Board in England for instruction in chemistry and physics; it also contained the following passages:—

> The committee having considered, in accordance with the request of the Royal Colleges, the following resolution adopted by the British Medical Association—viz., "That it is desirable that diagnosis and treatment of diseases of the eye, including the estimation of refractive errors and retinoscopy, should be compulsory subjects in every medical curriculum and that every student should undergo a practical examination therein"—decided to report as follows: That as the diagnosis and treatment of diseases of the eye, including the estimation of refractive errors and retinoscopy, are included in the curriculum of professional study, and that questions in these subjects are asked from time to time in the examination, the committee are of opinion that it is not necessary to make any change in the present arrangements of the examination.

The PRESIDENT then dissolved the Comitia.

UNIVERSITY OF LONDON.—Professor Sidney Martin, F.R.S., has been elected to complete the term of Dean of the Faculty of Medicine for the period 1910–12.

UNIVERSITY OF OXFORD.—Dr. Ernest Mallam, Litchfield lecturer in medicine, has been elected by the Board of Faculty of Medicine as a member of the committee for the nomination of examiners in medicine, to hold office until the first day of Hilary Term 1913, vice Dr. W. Collier, resigned. The Board of Faculty of Medicine has coöpted Dr. Reginald Wall and Dr. Theodore Acland as members of the board for a further statutable period of two years.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

Borough of Southend-on-Sea.—Dr. C. G. Pugh, on the basis of the number of inhabited dwellings, and upon the assumption that there are still, as found at the last census, 5·3 persons per house, estimates the population of Southend at 64,989. These figures show a very remarkable increase on the census population of 1901, which amounted only to 28,857. The birth-rate for the year 1910 was only 17·69, but as to this Dr. Pugh thinks that it may be due in part to the relatively large number of unmarried women employed as shop assistants, domestic servants, &c. The death-rate was 9·54 per 1000, and the percentage of uncertified deaths 6·6. The infantile mortality was 87·82 per 1000 births. The Notification of Births Act has not been adopted, and there are no official health visitors. The cancer death-rate amounted to 1·00 per 1000, but, as Dr. Pugh observes, this rate has practically no scientific value in a place like Southend where persons already cancerous are likely to go for the benefit of their health, and, in fact, a similar caution might well be uttered with reference to all the rates, and especially perhaps the tuberculosis death-rate. But as regards this latter, the death-rate from pulmonary tuberculosis was for 1910 only 0·80 per 1000, which was lower than the cancer death-rate, and if the exotic cases of phthisis are eliminated the death-rate comes to only 0·32 per 1000. But in this connexion the age and sex distribution of the population has to be considered as well as the number of phthisical patients who may leave Southend for treatment elsewhere. With respect to Poor-law cases of phthisis Dr. Pugh states that the experience of 1910 confirmed that of 1909, that patients do not generally apply for relief to the Poor-law authority until the disease is past either cure or economical improvement. It must be a matter of satisfaction to the town council that for the second year in succession there has been no death from enteric fever in Southend. These excellent results are associated by the medical officer of health with the letting of the Southend foreshore to a shell-fish company, the company preventing the collection of shell-fish from the foreshore by trippers and hawkers. The full-grown oysters are gathered by the employees of the company and thrown into deep water, while oyster-spat and brood are collected and sent to unpolluted water.

Bath Urban District.—Unlike Southend, where there has been a phenomenal increase of population, that of Bath is practically stationary. At the census of 1891 the population was 51,884, and in 1901, 49,839. For 1910 it is estimated by Dr. W. H. Symons at 50,000. As usual, the after-histories of the Bath cases of phthisis treated in the corporation beds at Winsley Sanatorium are furnished in this report, and as these statistics are amongst some of the few which are properly presented they are abstracted:—

Year of discharge.	Number of patients.	Number alive in January, 1911.
1905	6	2 (at full work)
1906	6	3 (,, ,,)
1907	7	4 (3 at full work)
1908	8	3 (2 ,, ,,)
1909	9	6 (5 ,, ,,)

There is a further table which tells the well-known story that early cases are more frequently restored to full working capacity than advanced ones. It is stated in the report that with one exception all the Bath cases have made some improvement in health, but it is added that the immediate results of treatment are of very little real value, as practically all, even the advanced cases, find their cough diminished, appetite, digestion, and sleep improved, and sweats almost unknown. The duration of improvement made depends, however, upon the extent and stage of the disease. The advanced cases may be improved and restored to work for a time, but sooner or later they are sure to relapse unless they can live in exceptionally favourable circumstances.

County Borough of South Shields.—Dr. S G. Mostyn estimated the population of this borough at 114,000, as compared with an estimate of 119,737 of the Registrar-General. The infantile mortality for 1910 was 111 per 1000 births, a rate

which represents a very material reduction on former years, but the rates in some of the wards are still very high, ranging from 148 to 61 per 1000 births. There were 11 cases of small-pox notified during 1910, and the history of some of the cases shows how very difficult it is to prevent importation of this disease by sea. The first case was that of a youth who left his ship at Middlesbrough before it was found that a member of the crew was suffering from small-pox. As the youth's address was unknown he could not be kept under observation, and when he was discovered the eruption was well developed. Fortunately, although he had come in contact with several persons no other case occurred. In the second instance a mild case of small-pox was discovered in the town in the third week of the disease, and in the third instance two cases of this disease had occurred on the ship from which the patient came and which he left at King's Lynn. At the end of April Dr. Mostyn discovered an out-patient at the infirmary in the early stage of the disease, and it was found that the carpenter of the ship on which this man was boatswain had suffered from a skin eruption during a voyage from the Black Sea to Rotterdam. This carpenter died and his wife suffered from a very mild attack, but before the malady had been recognised the carpenter had probably infected other people in South Shields, and it is clear that the captain of the vessel was much to blame for failure to notify the first case on arrival at Rotterdam. Nearly 200 contacts were kept under observation at their homes in South Shields, and the authorities put to endless trouble, which might all have been avoided had the Rotterdam authorities known of the circumstances of the first case and telegraphed to the next port of call.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 7666 births and 4980 deaths were registered during the week ending April 8th. The annual rate of mortality in these towns, which had been equal to 15·2 and 15·4 per 1000 in the two preceding weeks, declined to 15·1 in the week under notice. During the 13 weeks of last quarter the death-rate in these towns averaged 15·8 per 1000, and exceeded by 1·0 the exceptionally low rate in the 76 large towns during the corresponding quarter of last year. The annual death-rates during the week under notice in these towns ranged from 7·5 in Burton-on-Trent, 7·7 in King's Norton and in Smethwick, and 8·3 in Bournemouth, to 24·2 in Stockton-on-Tees, 24·7 in Swansea, 25·4 in Devonport, and 28·8 in Middlesbrough. The 4980 deaths from all causes in the 77 towns showed a decline of 92 from the number returned in the previous week, and included 571 which were referred to the principal epidemic diseases, against numbers declining from 702 to 661 in the four preceding weeks; of these 571 deaths, 328 resulted from measles, 111 from whooping-cough, 49 from diphtheria, 44 from infantile diarrhœa, 22 from scarlet fever, 16 from enteric fever, and 1 from small-pox. The annual death-rate in the 77 towns from these epidemic diseases averaged 1·7 per 1000, against 2·1 and 2·0 in the two previous weeks. The fatal cases of measles in the 77 towns, which had declined from 474 to 378 in the four preceding weeks, further decreased to 328 in the week under notice, but caused annual death-rates equal to 3·2 in Coventry, 3·3 in Rhondda, 4·9 in Plymouth, and 8·5 in Devonport. The deaths from whooping-cough, which had been 136 and 141 in the two previous weeks, declined to 111 in the week under notice; the highest annual rates from this disease in the week were 1·4 in Warrington, 1·9 in Stockton-on-Tees, and 2·9 in Middlesbrough. The 49 deaths referred to diphtheria were within one of the number in the previous week, and included 15 in London and its suburban districts, 4 in Sheffield, and 3 in Bradford. The 44 deaths of infants under 2 years of age attributed to diarrhœa showed a decrease of 14 from the number in the previous week. The 22 fatal cases of scarlet fever showed a slight increase; 4 were recorded in Stoke-on-Trent and 3 both in London and in Liverpool. Of the 16 deaths referred to enteric fever (against 14 and 15 in the two previous weeks), 2 each occurred in London, Manchester, Nottingham, and Preston. The one fatal case of small-pox was registered in Bootle. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had steadily declined in the seven preceding weeks from 1276 to 1036, had further fallen to 991 on April 8th; 100 new cases of this disease were admitted to these hospitals during the week, against 146, 121, and 125 in the three preceding weeks. These metropolitan hospitals also contained on April 8th 879 cases of measles, 864 of diphtheria, 290 of whooping-cough, 21 of enteric fever, and 19 of small-pox. The 1407 deaths from all causes in London in the week under notice were equal to an annual rate of 14·9 per 1000 (against 15·1, the mean rate in the 77 towns), and included 304 which were referred to diseases of the respiratory system, against 295 and 324 in the two preceding weeks; 12 deaths were directly referred to influenza. In the 77 towns 170 deaths were attributed to different forms of violence, against 151 and 167 in the two preceding weeks; and 431 inquest cases were registered. The causes of 54, or 1·1 per cent., of the deaths registered in the 77 towns during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, West Ham, Bradford, Newcastle-on-Tyne, Hull, Salford, and in 44 smaller towns; the 54 uncertified causes of death in the 77 towns in the week under notice included 6 in Stoke-on-Trent, 6 in Liverpool, 5 in Birmingham, 4 in Bootle, and 3 in Manchester and in Leicester.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 904 births and 635 deaths were registered during the week ending April 8th. The annual rate of mortality in these towns, which had been equal to 17·2 and 15·6 per 1000 in the two preceding weeks, rose again to 17·3 in the week under notice. During the 13 weeks of last quarter the death-rate in these towns averaged 16·8 per 1000, and exceeded by 1·0 the mean rate during the same period in the 77 English towns. The annual death-rate for the week in the eight Scotch towns ranged from 9·7 and 11·0 in Perth and Aberdeen, to 22·5 in Greenock and 24·1 in Dundee. The 635 deaths from all causes in the eight towns during the week showed an increase of 62 upon the number in the previous week, and included 67 which were referred to the principal epidemic diseases, against 66, 55, and 43 in the three preceding weeks; these 67 deaths were equal to an annual rate of 1·8 per 1000, which exceeded by 0·1 the rate from the same diseases in the 77 English towns; the highest rates from these diseases in the Scotch towns during the week were 2·4 in Dundee and 4·4 in Paisley. Of the 67 deaths from these diseases in the eight towns 41 resulted from whooping-cough, 9 from diarrhœa, 6 from diphtheria, 5 from scarlet fever, 5 from measles, and 1 from enteric fever, but not one from small-pox. The fatal cases of whooping-cough, which had been 36, 32, and 28 in the three previous weeks, increased to 41 in the week under notice, of which 23 occurred in Glasgow, 6 in Paisley, 4 in Dundee, 3 in Edinburgh, and 2 in Greenock. The 9 deaths attributed to diarrhœa (including 8 of infants under two years of age) exceeded the number in the previous week by one; 4 were recorded in Glasgow and 2 in Dundee. The 6 deaths referred to diphtheria somewhat exceeded the numbers in recent weeks; 4 were registered in Glasgow and 2 in Dundee. The 5 fatal cases both of scarlet fever and measles also showed an increase upon recent weekly numbers; 2 of scarlet fever occurred both in Glasgow and Edinburgh, and of measles 3 were recorded in Glasgow and 2 in Edinburgh. The 1 death referred to enteric fever occurred in Glasgow. The deaths referred to diseases of the respiratory system in the eight towns, which had been 115 and 109 in the two previous weeks, rose to 153 in the week under notice, and exceeded by 41 the number in the corresponding week of last year. The 20 deaths attributed to different forms of violence in the eight towns showed a further decline from the numbers in the two previous weeks; and 198, or 31 per cent., of the 635 deaths from all causes occurred in public institutions. The causes of 12, or 1·9 per cent., of the deaths registered in the week under notice in the eight towns were not certified or not stated; in the 77 English towns during the week the proportion of uncertified causes of death did not exceed 1·1 per cent.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated

population of 1,163,596 persons, 624 births and 499 deaths were registered during the week ending April 8th. The annual rate of mortality in these towns, which had been equal to 21·2 and 20·7 per 1000 in the two preceding weeks, rose to 22·4 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these towns averaged 20·5 per 1000; the rate during the same period did not exceed 15·8 in the 77 English towns and 16·8 in the eight Scotch towns. The annual death-rate for the week in the Irish towns was equal to 23·2 in Dublin (against 14·9 in London), 22·5 in Belfast, 30·8 in Cork, 35·6 in Londonderry, 17·8 in Limerick, and 11·7 in Waterford; in the 16 smallest of the Irish towns the mean annual death-rate in the week did not exceed 15·7 per 1000. The 499 deaths from all causes in the 22 towns exceeded the number in the previous week by 38, and included 25 which were referred to the principal epidemic diseases, against 23 and 21 in the two previous weeks; these 25 deaths were equal to an annual rate of 1·1 per 1000, which was 0·6 below the mean rate from the same diseases in the 77 English towns. These 25 deaths in the Irish towns in the week under notice from the principal epidemic diseases included 8 from whooping-cough, 5 from diphtheria, 4 from enteric fever, 4 from infantile diarrhœa, 2 from scarlet fever, and 2 from measles, but not one from small-pox. The 8 fatal cases of whooping-cough corresponded with the number in the previous week, and included 3 in Dublin and 2 in Londonderry. Four of the 5 deaths from diphtheria and 3 of those from infantile diarrhœa occurred in Dublin. Of the 4 deaths referred to enteric fever (exceeding the numbers in recent weeks), 3 were recorded in Dublin and 1 in Belfast. The deaths in the 22 towns referred to diseases of the respiratory system, which had been 90, 94, and 107 in the three preceding weeks, further rose to 121 in the week under notice. Of the 499 deaths from all causes 153, or 31 per cent., were recorded in public institutions. The causes of 14, or 2·7 per cent., of the deaths in the 22 towns in the week mentioned were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death did not exceed 1·1 per cent. in the 77 English towns, and was 1·9 per cent. in the eight principal Scotch towns.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Inspectors-General of Hospitals: H. Todd to Haslar Hospital and C. James to Plymouth Hospital.

The undermentioned Acting Surgeons have been confirmed in the rank of Surgeon in His Majesty's Fleet:—Maurice Charles Mason (dated May 6th, 1910), Sidney Wilfred Grimwade, Herbert Elward Perkins, Alexander Scott, Basil Taylor, Ernest Charles Holtom, Charles Fitzgerald Willes, James Gordon Danson, George Jameson Carr, Henry Houston Ormsby, Edward Moxon Browne, Algernon Edgar Percy Cheesman (dated Nov. 4th, 1910).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel James H. A. Rhodes retires on retired pay (dated April 19th, 1911).

Surgeon General G. W. Robinson, administrative medical officer at Cape Town, has been transferred to the Home Establishment on appointment as Principal Medical Officer, Aldershot Command. Colonel W. G. Birrell, in medical charge of the Royal Herbert Hospital at Woolwich, has been appointed Administrative Medical Officer at Dover in succession to Colonel A. E. J. Croly, who has retired. Colonel R. W. Ford, D.S.O., administrative medical officer at Tidworth Park, Salisbury Plain, has been appointed Administrative Medical Officer at Woolwich. Colonel T. J. O'Donnell, D.S.O., principal medical officer, Aden Brigade, has been selected as Administrative Medical Officer at Tidworth. Colonel F. J. Jencken in medical charge of the Royal Victoria Hospital at Netley, has taken over the appointment of Administrative Medical Officer of the Colchester District in succession to Colonel A. P. O'Connor, C.B., who has retired. Brevet-Lieutenant-Colonel O. R. A. Julian, on return from a tour of service in India, has been appointed to the Irish Command and posted to the Dublin District for duty. Lieutenant-Colonel M. W. Russell, Staff Officer to the Principal Medical Officer of the Eastern Command, has been selected for the higher rate of pay under Article 317 of the Royal Warrant. Lieutenant-Colonel J. Meek, on return from a tour of service in India, has been appointed to the Southern Command and placed in Medical Charge of the Military Hospital at Cosham. The following Lieutenant-Colonels have been detailed for service abroad during the coming trooping season: R. Kirkpatrick, C.M.G., A. Dodd, H. M. Sloggett, C. C. Reilly, M. L. Hearn, C. A. Lane, M. J. Sexton, T. J. Lavie, J. Fallon, C. J. Macdonald, R. W. Wright, D. M. Saunders, and J. Donaldson. Major C. Dalton, on return from leave of absence on medical certificate, has taken up duty as Staff Officer to the Principal Medical Officer of the Irish Command, relieving Major D. J. Collins, who has been officiating. Major G. S. Crawford, on completion of a tour of service at Malta, has been appointed to the Irish Command and posted to the Dublin District for duty. Major J. D. McD. McCarthy has embarked for a tour of service in India. Major W. E. Hardy has returned home for duty from South Africa. Major S. F. Clark has been transferred from the London District to the Western Command. Major A. H. Morris has embarked for a tour of service in Malta. Captain R. K. White, from Aldershot, has been ordered to the Irish Command for duty in the Cork District. Captain W. C. Croly, on arrival in India, has been appointed to the Station Hospital at Secunderabad. Captain R. N. Hunt, from Borden, has taken up duty in Egypt. Captain L. L. G. Thorpe has been transferred from Tidworth Park to the Royal Victoria Hospital at Netley. Captain J. T. McEntire has arrived at Sierra Leone, West Africa, for a tour of duty. Captain J. H. R. Bond has been appointed to the Medical Charge of the Cantonment General Hospital at Neemoch. Captain N. Low has arrived home from India. H.E. the Commander-in-Chief in India has granted one year's extension to Captain P. S. Lelean on his appointment as Specialist Sanitary Officer to the Seventh (Meerut) Division. Captain F. W. Lambelle, from York, has taken up duty at the Station Hospital at Mhow. Lieutenant J. B. Hanafin, from Kalabagh, has joined at Attock. Lieutenant W. G. Wright, Lieutenant H. S. Ranken, Lieutenant J. A. Manifold, Lieutenant S. S. Dykes, and Lieutenant W. H. Riordan have been detailed for service abroad during the coming trooping season.

INDIAN MEDICAL SERVICE.

Colonel W. A. Quayle, principal medical officer of the Abbotabad and Sialkot Brigade, has arrived home on leave of absence from India. Lieutenant-Colonel S. H. Henderson, superintendent of the Central Prison at Agra, has been appointed to officiate as Inspector-General of Prisons in the United Provinces during the absence on leave of the Honourable Lieutenant-Colonel C. Mactaggart. Major H. J. Walton, on completion of special duty, has taken over charge as Civil Surgeon at Bulandshahr. Major C. Duer has been appointed as Civil Surgeon of the First Class on the Indian establishment in succession to Lieutenant-Colonel R. E. S. Davis, who has retired. Major R. H. Price has taken up duty as Specialist in Midwifery and Diseases of Women and Children to the Fourth (Quetta) Division. Major Leonard Rogers, professor of pathology at the Medical College, Calcutta, has been granted three months' privilege leave of absence combined with six months' furlough home from India. Major A. F. Stevens has had his appointment as Civil Surgeon of Hazaribagh confirmed by the Government of India. Captain F. H. Stewart, on rejoining military employment, has been appointed to the medical charge of the 27th Punjabis, stationed at Alipore, Calcutta. Captain O. St. John Moses has been appointed Police Surgeon at Calcutta in succession to Major W. D. Hayward. Captain H. A. Williams, D.S.O., resident medical officer at the General Hospital, Rangoon, has been granted two years' leave of absence home from India. Captain R. M. Dalziel has taken over duty as Superintendent of the Central Jail at Mooltan.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The undermentioned Lieutenants are confirmed in their

rank: Keith B. MacGlashan, Aubrey G. Brown, and Philip W. Mathew.

Leonard Whitaker Owen Taylor to be Lieutenant (on probation) (dated March 17th, 1911).

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

The opening article in the April issue of this journal is a joint one on the Use of Salvarsan in Syphilis, by Major T. W. Gibbard, Captain L. W. Harrison, and Lieutenant A. S. Cane. Although the authors of the paper do not think that the time has yet arrived to pronounce any judgment as to the place which salvarsan will finally occupy in the therapy of syphilis, they are of opinion that the remedy has a more marked and rapid effect on the various manifestations of syphilis than that following the administration of mercury. Further, they believe that salvarsan is a valuable remedy in the treatment of syphilis, and adverse judgment on the score of relapses will be unjustifiable till the best method of administering it has been discovered. Major W. W. O. Beveridge, D.S.O., and Captain N. Dunbar Walker are the joint authors of an article on the Fate of Arsenic in the Body after Injection in the Form of "606." A report by Colonel Sir David Bruce, C.B., on the present condition of Ismailia as regards malarial fever, and a paper by Colonel T. M. Corker, on the Definition of a Units Protection by Anti-typhoid Inoculation are among other articles to which attention should be drawn. Under the heading of "Sport" Captain W. F. Reichwald, of the Royal Horse Artillery, describes a day with cobra hunters and the use of the "absorbent stone" as a remedy for snake-bite by the Kanjahs or gipsies of the Punjab. The story is an interesting and exciting one.

THE ROYAL VICTORIAN ORDER.

Fleet-Surgeon William Bett, R.N., Fleet-Surgeon at the Royal Naval College, Dartmouth, has been appointed a member of the Fourth Class of the Royal Victorian Order.

THE NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on April 11th, Sir J. N. Dick, K.C.B., in the chair, the sum of £67 was distributed among the several applicants.

FAIR PLAY FOR TERRITORIALS.

Under the above title[1] a scheme has been put forward by Lieutenant-Colonel J. J. de Zouche Marshall, the main object of which is to bring before the Territorial Force and the public "the cash value of the citizen soldier's part time that is used to learn the art of war," a scale being framed in proportion to the pay, &c., granted to the regular soldier for his whole time devoted to acquiring that art. Lieutenant-Colonel Marshall is well known for his enthusiastic support of the old Volunteer Force; and as officer commanding the 3rd Home Counties Field Ambulance, as well as member of the Surrey Territorial Force Association, he has given considerable time and thought to the organisation and training of the citizen soldier. He puts the matter fairly and squarely that the Territorial Force, although a great improvement on the Volunteers in point of organisation, is admitted by all competent and independent judges to be a distinct failure in point of numbers and efficient training. The only alternative put forward is universal compulsory service; but to this the political leaders on both sides are opposed, and there are no means available for carrying out any such scheme. There are not sufficient drill halls or drill instructors in existence even for the present strength of the Territorial Forces. We quite agree with Colonel Marshall's opinion that the work of the citizen soldier is far more exacting than it ever was before; and we fear that it is the case that the present inducements are not sufficient to tempt men to join; some enthusiasm was certainly shown when the new force was started, but it cannot be said that this has increased, or even been kept up at the same level. Colonel Marshall believes that men will not join because they are expected to work for nothing during 50 weeks of the year on the strength of being paid and fed for a fortnight in camp. At the initiation of his scheme Lord Haldane explained that this camp pay was not to be regarded as pay or reward for work done, but rather as an insurance against actual loss by officers and men. What Colonel Marshall now recommends is an extension of this "insurance against loss" all the year round. His proposal is that officers and men should be paid so much per hour for every hour spent in actual drill and instruction under the strictest supervision and discipline; he calculates this amount as one-twelfth of the daily amount paid to the officers and men of the regular forces, and works out the rates per hour for Territorials at 1*s.* 2*d.* for a captain, 9*d.* for a lieutenant, 5*d.* for sergeants, 4*d.* for corporals, and 3*d.* for privates; the equivalents of the higher pay for cavalry, artillery, engineers, Army Service Corps, and Royal Army Medical Corps should be added for these arms in the Territorial Service. He contends that this army pay would be looked upon by all ranks of the Territorial Force as a recognition that they were being "taken seriously" as part of the army. Full tables are given in the pamphlet of the pay and establishments for all units. The total cost of pay and allowances for a strength of 312,422 officers and men of all ranks would amount to £249,828 (we may observe that the total Budget estimate for the Territorial Forces, 1910–11, was £2,660,000). For this sum 48 one-hour drills would be provided by the force mentioned, the drills being once a week for a year, twice a week for six months, or two hours twice weekly as required. This is, at any rate, a concrete proposal for remedying the present unsatisfactory condition of matters in the Territorial Force. We quite agree with the author of the scheme that something must be done; he estimates that in two years' time, if present arrangements continue, the force will be non-existent; the only alternative will then be compulsory service, the cost of which will certainly be much greater, perhaps £4,000,000 a year. Colonel Marshall has worked out a practicable scheme which, though costly, does not appear to be more so than is to be expected for the return obtained. We commend it to the notice of all Territorial officers and others interested in the force, whether in its medical units or in the combatant branches; the gist of it is that the Territorial officers and men should receive pay, proportionally with the regular army, for time and labour given to the State; it appears to us to be *primâ facie* reasonable and worthy of trial; experience only can show whether it will be successful or not. It is, at any rate, doing something. "Up to now, with all our leagues," says Colonel Marshall, "we have done, and are doing, absolutely nothing—except on paper." Moreover, according to the last return of the Territorial Force there has been a falling off of 67,761 on the year's recruiting. This will not do.

[1] Fair Play for Territorials, by Lieutenant Colonel J. J. de Z. Marshall, V.D., R.A.M.C. (T.F.). Bull and Son, Surbiton. Price 1*s.* 6*d.*

THE ELECTION OF A DIRECT REPRESENTATIVE ON THE GENERAL MEDICAL COUNCIL.

Mr. George Jackson addresses the following letter to his constituency:—

LADIES AND GENTLEMEN,—Owing to the untimely death of Dr. L. S. McManus a vacancy has occurred amongst the Direct Representatives on the General Medical Council. I have been requested by numerous friends and supporters at former elections to offer myself as a candidate for the vacancy thus created.

It will be remembered that at the 1906 election I polled within 17 votes of the lowest successful candidate; I am therefore encouraged to hope on that ground that I shall be successful on this occasion.

Having had the honour to serve you on the Council from 1902 to 1907, I am thoroughly acquainted with the duties of the office. During the time I occupied a seat on the Council I served on the committees of the Diploma of Public Health, Preliminary Scientific Education and Examinations, and that of the Midwifery practice required of candidates for medical qualification.

Amongst many matters requiring attention, one of the most urgent is that more stringent regulations should be adopted with regard to unqualified practice—and quacks generally. Any Act of Parliament which may be passed should contain a clause forbidding any colourable pretence being made of being a physician or surgeon—this would be most desirable.

When in the Council, I urged the necessity of some method being adopted which would allow of some tangible return to

the principle of modified pupilage, by which students would learn how to treat the patient as well as the disease. The conditions of medical practice are changing rapidly, and there is more and more tendency for the State to interfere in these matters. There is little doubt but that the Government action with regard to State invalidity, and reform of the Poor-law administration will involve great changes in medical practice. It certainly should be the duty of the General Medical Council to watch the progress of events, and endeavour to prevent the tendency to exploit the medical profession.

I shall be a determined opponent of any attempt of the Government to increase the facilities of private patients of medical men getting gratuitous treatment, whether from hospital physicians or State officials. I have served on the Medico-Political, and other central committees of the British Medical Association, and have been the representative of my division (Plymouth) at the representative meetings of the Association ever since their establishment. I have held the office of President of the South-Western Branch of the British Medical Association, and have also been President of the Incorporated Medical Practitioners' Association.

Soliciting your vote and interest, I have the honour to remain,

Your obedient servant,

GEORGE JACKSON, F.R.C.S. Eng.

10, Portland-villas, Plymouth, April 17th, 1911.

To the Editor of THE LANCET.

SIR,—Will you permit us to make use of your columns for the purpose of announcing to the profession, as we are glad to be able to do, that Dr. J. A. Macdonald of Taunton, the present chairman of Council of the British Medical Association, has consented to be a candidate for the seat on the General Medical Council rendered vacant through the much-regretted death of Dr. L. S. McManus.

Dr. Macdonald is widely known to the profession as a general practitioner who, owing to his devotion to the advancement of the interests of the medical profession and conspicuous aptitude for public work, has been called upon to fill many important offices in the British Medical Association. As a member, and afterwards chairman, of the Medico-Political Committee of the Association, as chairman of the Representative Body, and now chairman of Council, he has become thoroughly familiar with the needs of the medical profession as affected by the administration of the Medical Acts by the General Medical Council. As himself a general practitioner he is personally familiar with the disabilities from which the profession at present suffers and the reforms that are needed in various directions, including those which affect the work of the General Medical Council.

We have the utmost confidence in commending Dr. Macdonald to our fellow practitioners in England and Wales as one whose experience and abilities are eminently calculated to further the interests of the profession if elected to be a member of the General Medical Council.

We are, Sir, yours faithfully,

EWEN J. MACLEAN,
Chairman, Representative Body, B.M.A.;
LAURISTON E. SHAW,
President, Metropolitan Counties Branch, B.M.A.

April 19th, 1911.

To the Editor of THE LANCET.

SIR,—Referring in THE LANCET of April 8th to the vacancy in the General Medical Council caused by the lamented death of Dr. McManus, Dr. A. G. Bateman says that "we must all unite to send to the Council one worthy to follow in the footsteps of Dr. McManus as a *persona grata* both to his colleagues and the Council." I am pleased to learn that Mr. George Jackson, J.P., of Plymouth, a former Direct Representative, has consented to offer himself as a candidate, and I feel sure that he will, by universal consent, be held to meet in every respect the requirements regarded by Dr. Bateman as essential. Having most efficiently served his professional brethren at the Council for five years, he is thoroughly acquainted with the work. That his services were highly appreciated by the profession is shown by the fact that at the last election he polled within about 17 of the number of votes recorded for the lowest *successful* candidate. As I had the honour of occupying a seat at the Council from Jan. 1st, 1897, to Jan. 1st, 1907, and therefore during the five years that Mr. Jackson held office, I can bear testimony to the admirable services he rendered to his constituents, and I am satisfied that it would be extremely difficult to find anyone better qualified to succeed the late Dr. McManus as a representative of the rank and file of the profession than my former colleague, Mr. George Jackson, and I trust that he will be permitted to take the seat he formerly held without the worry and cost of a contested election.

I am, Sir, yours faithfully,

GEORGE BROWN, M.R.C.S. Eng.

Callington, Cornwall, April 15th, 1911.

Correspondence.

"Audi alteram partem."

TRAINING AND ROWING.

To the Editor of THE LANCET.

SIR,—The facts to which Dr. Harry Campbell draws attention in your issue of April 8th are of great interest, but I do not agree with the conclusion he suggests. From the fact that Cambridge lost heavily in weight during training, whereas the Oxford crew gained slightly, he makes the deduction "that in selecting a crew preference should be given to men who do not need to be trained down." The man of 19 to 24 for such an event (coxswains excluded) who needs to "train down" is, and ought to be, a very rare exception.

I have long believed that the gain or loss in weight is generally a measure of the judgment used by those responsible for the training. The most important element in the training of a man or a set of men for an athletic contest is undoubtedly a correct judgment as to the amount of physical exercise to set throughout the whole period of practice. Cambridge usually starts practice sooner than Oxford, and I believe that they have usually been worked more heavily than Oxford, perhaps particularly in the early stages of practice. I have often wished that somebody would take the trouble of collecting and publishing similar figures for the last 30 years to those which Dr. Campbell published for this year. My knowledge and observation do not extend beyond the last 20 years, is only intimate for a few of these years, and I have not been able to look up the figures, but my impression is certainly that Cambridge, more frequently than Oxford, have shown loss in weight during the period of training. Further, I believe the figures for the last 30 years would show that such alteration in weight was reversed or lessened when Cambridge won, especially when they did so well and easily.

There is one other factor in the physical progress of a crew and in the improvement or deterioration of their prowess which must not be lost sight of, and that is the moral and mental effect of feeling confident. I have known several crews but slightly inferior to their opponents "go off" seriously towards the end of practice largely from the depressing effect of loss of confidence.

I am, Sir, yours faithfully,

S. VERE PEARSON, M.R.C.P. Lond.

Mundesley, April 12th, 1911.

THE "TRUST" DANGER IN CHARITY.

To the Editor of THE LANCET.

SIR,—The Trust war in America is one of the most striking and important episodes in modern commercial history. Founded for the perfectly legitimate purpose of securing economy and efficiency by combination, and still possessing these qualities in a high degree, the Trusts have gradually acquired enormous power and have by their tyrannical use of it proved gravely detrimental to the community and a danger to the State. A few years ago the idea that any such similar dangers should arise in connexion with charity, or should even remotely threaten the distribution of charitable funds, would have appeared ridiculous. In the old days each institution sank its well into the common reservoir of charitable funds and obtained therefrom what supplies it could by its own efforts and for its own objects. Now, however, the collection of charitable funds has been systematised, gathered into the hands of various "Funds," and as a result the distribution of very large sums of money rests at the discretion of the committees of a comparatively small number of bodies. Considering chiefly the medical

charities of London there can be little doubt that this centralisation has resulted in an improvement in the machinery for collection, in the avoidance of overlapping, and in safeguarding from misuse funds obtained by comparatively uncontrolled institutions. On the other hand, corresponding dangers have arisen. The sum available for charities is a fairly constant quantity, and the institution of the modern "Fund" has rather altered the distribution of the sums available than increased the total amount. No doubt, since considerations apart from those of charity affect the question of donations to bodies of such prestige as the King Edward VII. Hospital Fund, a somewhat larger area of contribution has probably been tapped than was reached by the old machinery, and the total sum contributed possibly to some extent increased. Still, the fact remains that the newer bodies, such as the various hospital funds, have tapped the same source of supply as that from which the old institutions drew their individual incomes, and, as happens in the strictly analogous case of a water-supply when a deeper well with more efficient pumps is sunk into the contributing strata, have, with their improved machinery, drained to a large extent the individual wells of the charities and left them dependent on the funds distributed by the more powerful combinations. It is unnecessary to press the analogy with the first stage in the progress of Trusts.

The charities having been deprived of their individual sources of income to a considerable extent, especially as concerns legacies, and thus rendered dependent on the distribution committees of the funds, it would seem desirable that those having control of the distribution should not be directly concerned in the management of any of the institutions which share in the funds distributed. This, however, is not the case. In thus pointing out the existence of an unsatisfactory condition of affairs there is not the slightest suggestion of any *mala fides*; the danger lies in excess of virtue. It is doubtful whether it is realised with what a passion of devotion the various London hospitals are served by their officials, but this very devotion renders them a little blind to the needs and merits of what in this connexion may be described as rival institutions.

In considering the sums to be annually allotted to the charities the distribution committees have taken into account not only the work done by a charity but also its supposed capacity to bear the expense of that work, and where legacies have been left to individual charities they have regarded this as a reason for diminishing the grant from the central funds. The public have scarcely realised, as recent appeals testify, that if this view is to rule the distribution it becomes impossible to help an individual charity, and that such donations merely relieve the pressure on the central fund. Indeed, the peculiar and unintended position has been reached that the only way in which a gift can be made to an individual hospital is to leave the legacy to the medical school attached to that hospital.

Recent history has shown that the central funds, or their controlling bodies, are peculiarly exposed to the attacks of various religious, political, and merely faddist groups who are supposed, often with singularly little reason, to represent important bodies of contributors to the incomes of these funds. Examples of all these forms of pressure can readily be recalled. It might be supposed that the powerful funds, even if exposed to attack, would at least be well able to meet it, but their attitude has in many instances been a source of very considerable anxiety to the managers of many of the institutions dependent on them for supplies. Naturally desiring to escape controversy with bodies which delight in agitation, the committees have allowed themselves to be drawn into positions from which they have been unable to extricate themselves without grave injustice to interests they are supposed to guard.

Notwithstanding these slight clouds in the firmament of benevolence, it is probable that the advantages of the establishment of these charitable "Trusts" at present outweigh the dangers, and that we have not yet got beyond the beneficent stage. It is, however, well to take warning from these indications and from the history of the commercial Trusts, and if possible secure the advantages of combination without suffering from the drawbacks and dangers.

I am, Sir, yours faithfully,

April 7th, 1911. M.B.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool Royal Infirmary: Opening of the New Out-patient Department; Address by Mr. Edmund Owen.

THE new out-patient department in connexion with the Liverpool Royal Infirmary was formally opened on March 29th by the Earl of Sefton, who was accompanied by the Countess of Sefton. Sir Archibald Williamson, Bart., M.P. (the new president), occupied the chair, and there was a large and distinguished gathering. It will be remembered that the Royal Infirmary was comparatively recently rebuilt, and was opened by H.R.H. the late Duke of Clarence in October, 1890. The total cost amounted to £181,000. After 20 years' experience, and notwithstanding the great changes and improvements that have taken place in hospital construction, the Royal Infirmary maintains its high position as a convenient and well-arranged hospital, but the out-patient department has become inadequate. Originally, the treatment of out-patients as a class was not contemplated; all were prescribed for as only waiting for admission to the wards, and the value of out-patient work was so partially recognised that the accommodation assigned was never sufficient. The average number of patients for the ten years ending 1890 was 8064; 1900, 12,527; 1910, 20,741; whilst the total attendances given now exceed 80,000 a year. Under the methods of investigation which have recently been adopted it may fairly be asserted that only deserving cases are treated and that little abuse exists. It has therefore been apparent for some time both to the committee and medical staff that improved accommodation was essential. How best to carry this out had been long under consideration, and at last difficulties, financial and otherwise, have been overcome. With the aid of the Mitchell Banks' Memorial Fund a suitable site was acquired adjacent to the infirmary in Pembroke-place and Brownlow-street; and the gift of £10,000, in memory of the late Mr. E. R. Bickersteth, together with other generous contributions, enabled the committee to proceed with the building. The cost will be about £30,000, to which it is hoped, following precedent, the corporation will make the substantial contribution for which it is seeking powers in a Parliamentary Bill. In architecture and material the new building closely resembles the hospital. On the ground floor ample and suitable accommodation is provided for medical and surgical cases. The large hall, 75 ft. by 35 ft., open to the top, has seating for 200 people. On the first floor provision is made for some of the special departments—diseases of women; eye; throat and ear. The basement provides roomy accommodation for the specific, skin, and massage departments. Mr. Edmund Owen (consulting surgeon to St. Mary's Hospital, London), the visitor, in an interesting address, said that it was not the first time he had visited the Royal Infirmary. He was shown over the splendid building by his late dear friend, Sir William Mitchell Banks, and well remembered to have then felt sure that the last word had been spoken as regarded internal hospital construction. He had no hesitation in saying that day, so far as his experience went—and it was not short or limited—that the very last word had been spoken in connexion with out-patients' departments. He was immensely pleased with everything in that magnificent new building. If he were down there that day assisting at the opening of a large institute, or stores, or workmen's flats, he would say that he hoped the time was coming when the rush of people to the institution, whatever it might be, would be so great that they would find the splendid accommodation insufficient. But he would not say that in respect of their new out-patient department. What he would say was that he hoped that the superb accommodation which they had would always be enough—in fact, that they would find that they had a little bit overbuilt themselves. That meant that those working there had got plenty of light and air and elbow-room. If there was a great rush of people through the open door—he was glad to see that it was not too wide—there would be something wrong. It would be either that there was too much distress and poverty in Liverpool or that the committee of management was not taking sufficient care about the admission of patients

to the advantages of the out-patient department. He hoped that as time went on the committee of management would be particularly careful to see see that it was not putting itself into competition with medical men in the neighbourhood. They might say that the people who came there could not afford to pay the fees which would be expected of the medical men who would otherwise be looking after them outside; but they did not know, and he was not going to tell them, how the medical men of the large neighbourhood all around were willing and ready to accommodate their charges to the people who might be seeking their advice—medical men extremely well qualified, many of them most excellent practitioners. If the committee were going to hold up their finger, as it were, to beckon all those people to come to the out-patient department, they would be doing immense harm, not only to the medical men whom they were thus robbing, but to the people themselves. There was an enormous amount of pauperisation going on now. God knows, there was plenty of poverty, but poverty with some people had come to be really a profession, and a lucrative one. He was a little bit surprised to see that they had there the system of subscribers' letters to the hospital. He regarded that as a remnant of the glacial epoch. Were they given to people who had been subscribing to the hospital as a sort of set-off to their subscriptions? If that were the case, the people who subscribed with that object in view ought to be educated. The system of subscribers' letters ought to be abolished. To the medical and surgical staff he would say: Let them not be at work in their departments with an eye upon the wards, as it were, looking forward to the time when they could be working in the splendid hospital close by. Their work should be steady, prolonged, and punctual, and they should do an enormous amount of teaching. An out-patient department was absolutely necessary, not only for the poor people who came to it, but in the great scheme of teaching. It was absolutely necessary that a hospital which was educating medical men should have an out-patient department from which they could get their material. The physicians and surgeons in that department should, as far as possible, make it a consultation department; they should let the medical men in the neighbourhood, far and wide, know that they were punctual in attendance, and would be ready to discuss any serious cases brought to them. As to the students, he begged of them to make the best possible use of the material supplied by the out-patient department. Sir Henry Burdett also addressed the gathering in an interesting speech.

April 15th.

BRISTOL.

(FROM OUR OWN CORRESPONDENT.)

University of Bristol: the New Playing Fields.

Mr. George A. Wills, the treasurer of the University, whose generous gift of £4000 procured the site for the new playing fields, has now promised to find another £1000 towards the cost of the new pavilion. This will amount to about £2200. The ground floor will contain dressing-rooms, baths, lavatories, &c.; on the first floor will be two large tea-rooms, and above these the scoring-box and a clock. The ground is within half an hour of the University.

Bristol Eye Dispensary.

The Bristol Eye Dispensary, which will next year celebrate its centenary, held its annual meeting on April 6th. Changes in the staff consequent on the resignation of Dr. A. Ogilvy were reported, and it was also stated that instruction to students had been given during the year. The number of patients admitted to treatment was 2825, of whom 1545 were "spectacle cases." The financial statement showed a deficit of £39 0*s.* 3*d.* Mr. A. W. Prichard, the senior honorary surgeon, urged that the State or the city council should make a grant to the institution, for undoubtedly the increased work was in part due to the attendance of elementary school children with defective eyesight. The chairman, Mr. P. J. Wosley, in moving a vote of thanks to the medical staff, said that he realised that nine-tenths of the work of the charity was the outcome of the time, advice, and ability of the honorary staff.

Bristol Children's Hospital.

At the annual meeting of the Ladies' Auxiliary of this hospital it was stated that 240 districts, representing a canvass of 39,000 houses, had been visited, with the result that £1360 had been raised on behalf of the hospital. Of this, £785 had been paid to the treasurer for the general account, £500 had been invested towards the support of the Eleanor May Lawrence cot, and the remainder represented the expenses of the collection.

Bristol General Hospital.

As a result of the special appeal for £45,000 for the proposed extension of the Bristol General Hospital, the sum of £38,416 has been already received. This leaves £6584 still to be obtained, and it is hoped that this amount will shortly be forthcoming.

Winsley Sanatorium.

The annual meeting of the Winsley Sanatorium was held on April 8th. Mr. John Moulton of Bradford-on-Avon has been appointed president, in the place of Lord Islington, the new Governor of New Zealand. The daily average number of patients in 1910 was 65·7; and the whole number admitted since the opening was 1292, with 85 per cent. of "improved" cases, and 42·2 per cent. discharged fit for some work. The medical board called attention to the judicious use of tuberculin by the resident medical officer, Dr. L. Crossley, saying that it considered the sanatorium the proper place for such treatment, which should be carried out with the utmost care. The financial outlook is better than it has ever been, for the institution for the first time in its history has a balance in hand. It is hoped that there may be opportunity for an early increase in the size of the sanatorium, so that it may be possible to raise the accommodation to 100 beds.

The Research Defence Society.

Following up his successful invasion of an antivivisection platform, Mr. Stephen Paget lectured recently at the Clifton Ladies' Club on "The Campaign Against Disease," alluding to the great part that animal experiments had played in the discovery of fundamental physiological and pathological facts. By way of illustrating the value of vivisection in relation to research now in progress he instanced the work being done in cancer and plague. The shop which was opened a few weeks ago for the dissemination of antivivisectionist literature is once more vacant.

April 18th.

WALES.

(FROM OUR OWN CORRESPONDENT.)

Improper Certification of Lunatics.

AT the last meeting of the Breconshire Court of Quarter Sessions it was stated that in certain instances lunatics who had been received from Swansea at the Joint Counties Asylum at Talgarth had been found to have been improperly certified so that it was necessary to release them and re-admit them on proper certificates. A communication was received by the court from the Lunacy Commissioners, who pointed out that it was imperative for a justice to see a lunatic before making an order for detention in an asylum. The Commissioners also stated that they gave no countenance to the practice, against which they had constantly protested, of bringing alleged lunatics to be examined at police courts or buildings parts of which were used for the administration of justice. The influence upon patients was frequently very prejudicial, leading them to the conclusion that they were being subjected to judicial examination for crime and that their subsequent confinement in an asylum was a form of imprisonment. The Commissioners expressed the hope that such examinations would be altogether dispensed with, except in the case of criminals, and that patients would be examined either at their own homes or at the workhouses of the district.

Overcrowding of Bridgend Workhouse.

At a meeting of the Bridgend board of guardians held a few weeks ago Mr. Wyndham Randall, the medical officer of the workhouse, drew attention to what he described as the unwholesome, unseemly, and insanitary condition of the

workhouse which had been brought about by overcrowding. In one low, gloomy room with nominal accommodation for 27 persons there were herded together 49 persons, men, women, and children of all ages. He maintained that these conditions were bad for all concerned, and particularly for the children. There appears to be an entire absence of classification in the institution and no special accommodation for epileptics or for children. Since Mr. Randall's report was presented the workhouse has been visited by Mr. Andrew Fuller, one of the Poor-law medical inspectors, and by Mr. Hugh Williams, a lay inspector of the Local Government Board, who endorsed the strictures of the workhouse medical officer. They recommended the erection of a temporary building and certain rearrangements which had become possible by the recent departure from the workhouse of about 40 men. In the meantime the board of guardians had become alive to the seriousness of the position and had given up the board room for the use of the inmates. A separate house had also been rented to accommodate some of the children. There appears to be some association between the overcrowding of the workhouse and the lack of housing accommodation in the district, for some of the women and children were in the workhouse owing to their inability to find houses, although their husbands were in full work. In the Penybont rural district, which is a part of the Bridgend Union, a public meeting of ratepayers has urged that steps should be taken to carry out the provisions of Part III. of the Housing of the Working Classes Act, 1890. In support of the need of more houses it was stated that the beds in some houses were occupied day and night.

Cardiff Milk-supply.

During the last quarter of 1910 there were taken at the railway stations in Cardiff 67 samples of milk, of which six were found to be adulterated. During the same period all of the 12 samples taken from shops or carts in the streets were up to the required standard. The staff of inspectors, 16 in all, for all purposes of the Public Health Acts would seem to be inadequate to the needs of the borough if a sufficient number of samples is to be taken to protect milk consumers against the trading in impure milk. The magistrates before whom the delinquents are brought are at last realising that a small fine is no deterrent, for in February last a dairy company was fined by the stipendiary magistrate £100, since reduced to £50 by the Court of Quarter Sessions, for selling milk which contained 14·7 per cent. of added water. The man who actually sold the milk was fined £20, and this sum was not reduced by the higher court.

April 17th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Royal Colleges and the Question of Precedence.

IN a judgment issued on April 12th the Lyon King has found that he has jurisdiction in the question of precedence of the Royal Colleges, and, *quoad ultra*, has continued the cause and appointed it to be put to the roll to hear parties as to relevancy and further procedure. In his note the Lyon King mentioned the previous steps in the case. Acting on the advice of the Secretary for Scotland he had at first declined jurisdiction. This was appealed to the first division of the Court of Session, and the Court remitted the case to him to decide whether or not in his opinion he had jurisdiction. The petition prayed that he should find decern, and declare that the petitioners were entitled to precedence in all time coming over the Royal College of Physicians on all public and ceremonial occasions, or otherwise to grant to the petitioners such precedence. The latter part of the prayer of the petition was certainly beyond his power to consider. It was only the King who could grant any particular precedence The note further, after dealing with the objections urged by counsel for the respondents, went on to show that the belief in the powers of jurisdiction of the Lyon King was of very old standing, referring finally to the terms of the Royal Warrant for a Scale of Precedency in Scotland of March 9th, 1905. As the petitioners contended that they already possessed a right of precedence over the respondents, he proposed to send the case to the roll to consider as to relevancy and further procedure. The Royal College of Physicians has appealed to the Court of Session against the decision of the Lyon King to take jurisdiction.

Royal Dick Veterinary College.

At a meeting of the Edinburgh town council on April 12th it was agreed to vote a grant of £300 per annum for three years for the funds of the Royal Dick Veterinary College.

New Nursing Home for Edinburgh.

The donations received up to April 12th for the proposed new nursing home in Edinburgh for patients of limited means amounted to £3755 15*s*. The home will contain 50 beds, 18 of which will be at the rate of £1 1*s*. per week, 18 at the rate of £2 2*s*., and 14 at £3 3*s*. per week. These charges will cover maintenance and nursing, while the patients will be responsible for the fees of the medical attendant. The sum of £10,000 is required for the building and equipment of the home, which, it is expected, will be self-supporting. The scheme for the establishment of the home has been drawn up by representatives of the Edinburgh branch of the British Medical Association and by the Edinburgh and Leith Medical Practitioners' Association, and about £900 of the sum required have already been subscribed by the members of the medical profession.

Glasgow Maternity Hospital.

In their report for 1910 the directors of the Glasgow Maternity and Women's Hospital state that the work carried on under the maternity department shows a marked increase since the new hospital buildings were opened, the number of cases treated during the year 1910 being nearly 1150 more than in 1907, the last year in the old hospital building. The gynæcological staff has been appointed, and this branch of the hospital work has been started. Instructions have been given to have an additional operating theatre for gynæcological cases proceeded with at an estimated cost of £500 or £600. The conversion of the old hospital buildings into a nurses' home has now been completed at a cost of £2749. To meet the balance of the cost of the new buildings, alterations, &c., £19,000 are still required. The directors have appealed for further donations to the building fund, and attention has also been drawn to the need for increased subscriptions to the ordinary revenue fund, in view of the fact that the expenditure for last year exceeded the income by £2531. The new constitution provides that the workmen in every shipyard, factory, or workshop, who have paid in the aggregate towards the funds of the hospital a donation of £25 or upwards, or an annual subscription prior to Dec. 31st in each year of £5 or upwards, shall be entitled to nominate one duly authorised representative to the court of contributors and subscribers; and that the representatives so nominated shall be entitled by themselves directly to elect two persons to the board of directors to be designated "workmen's directors." The number of cases dealt with during the past year constitutes a record, there being altogether 4881, of which 1383 were treated in hospital, while 3498 were outdoor patients, or patients treated in their own homes. Over 600 operations were performed. Not by any means the least valuable part of the work was done by the nurses visiting patients in their homes, as many as 2000 visits being sometimes made in a month. A large number of medical students and nurses also from all parts are coming to get their obstetrical and gynæcological training in the hospital.

Lunacy and Public Health in Glasgow.

At a meeting of the Royal Philosophical Society of Glasgow last week Mr. John Carswell dealt with the relation of lunacy to public health administration, and brought out some interesting facts to support his view that lunacy ought to be within the scope of public provision for the prevention of disease. He stated that there were over 18,000 certified insane persons in Scotland, about 16,000 of whom were maintained at the public expense at a cost of something over £400,000 annually. Lunacy administration, though costly, was not run extravagantly. The distribution of responsibility between the General Board of Lunacy, district boards of lunacy, and parish councils had some advantages, but now needed revision. The General Board lacked statutory powers, and the district boards and branch councils had no direct interest in the occurrence of insanity as a fact of social and medical interest. It was desirable to know why districts in the city

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of Glasgow with a high death-rate should also have a high lunacy-rate; also why 8·1 per 10,000 of the persons living in the Dalmarnock ward of the city should have become insane last year, while only 1·6 per 10,000 became insane in Cowlairs ward; also why a population numbering more than 100,000 residing in Dennistoun, Cowlairs, and Springburn should have had 35 persons certified insane for the first time last year, while Dalmarnock and Calton, with a population under 90,000, should have had 65 persons so certified. He suggested a relationship between physical defect and mental defect, the causes being equally amenable to attack by the methods of public health administration. Mr. Carswell thought that the administrative machinery required readjustment, so as to bring the question of the prevention of insanity within the sphere of public effort. He thought that the suggestions of the Royal Commission on the Care and Control of the Feeble-minded in Scotland, if carried out, would help towards this end.

April 17th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Dublin Hospitals Tuberculosis Committee.

THE third annual meeting of the above committee was held on April 12th, at 76, Grafton-street, Dublin, Sir John W. Moore being in the chair. The Countess of Aberdeen, Sir William J. Thompson, the honorary secretary of the committee, and many medical men were present. The minutes of the previous meeting having been read, confirmed, and signed, the reports for the year ended February, 1911, were laid before the committee and adopted. From the report of Mrs. A. M. Sullivan, chairman of the Samaritan committee, it appears that the sum of £93 15*s.* was spent by the Samaritan committee during the year as follows:—186 families received nourishment (eggs, milk, meat, meal, &c.); 176 patients received shoes, clothes, bedding, &c.; 14 families had rent paid for them while the breadwinner was at Newcastle or in one of the Dublin union hospitals; 91 children of parents suffering from tuberculosis were sent to the country through the Fresh-air Fund; 1 child was boarded out while the mother was in hospital; 9 children were sent to schools or institutions after the parents' death; and 1 patient was sent to Newcastle, and the sum of £3 17*s.* paid in advance for 10 weeks. A summary of the reports of the work done by the three tuberculosis district nurses in Dublin showed that 394 patients were attended by them during the year, a total of 6845 visits being paid. The report of their work was considered highly satisfactory by the committee.

Motor Traffic in Dublin.

The corporation of Dublin at a recent meeting passed a resolution requesting the Local Government Board to fix the rate of speed for motor-cars in the city at the same limit as is prescribed for horse traffic, "in view of the many accidents arising from reckless motor driving." The Local Government Board decided to have an inquiry into the question, which has now been held. The medical men of Dublin and the neighbourhood, feeling their interests concerned, held a protest meeting a few days ago at the Royal College of Surgeons, when a resolution was passed objecting against the imposition of any further restrictions on the motor traffic of Dublin. The medical profession was represented by counsel at the inquiry. Among the witnesses examined was the city coroner, who stated that in the 11 years in which he had held office he had conducted 12 inquests in the case of deaths occurring through motor driving. It was urged on behalf of the corporation that motors caused annoyance by raising dust, a dangerous point when it is remembered that the corporation is responsible for the cleansing of the streets, and that complaints have been frequently made of the dust nuisance caused by the dry method of sweeping the streets.

Hygiene in the Schools.

A discussion has recently taken place in the Dublin Education Society on the subject of the teaching of hygiene in the schools. The Board of National Education has introduced into the schools under its control a system of teaching of simple hygiene. In the secondary schools the Department of Agriculture and Technical Instruction includes in the practical science course tuition in physiology and hygiene. Moreover, the department arranges holiday courses of instruction in the subject for secondary school teachers, and these courses have been much frequented by both lay and religious teachers. The discussion emphasised the anomaly of attempting to teach hygiene in unhygienic surroundings and in insanitary school buildings.

Conference on Tuberculosis Dispensaries.

The Women's National Health Association is shortly to open a tuberculosis dispensary in Dublin, and the executive is at present discussing the lines on which it is to be run. To help in the decision two conferences have been held, when lectures were given by Madame Girard-Mangin, M.D., Directress of the Siegfried-Robin Anti-tuberculosis Dispensary in Paris, and by Fräulein Alice Salomon, M.D., who is engaged in similar work in Berlin. The most interesting points developed were as regards the social and educative sides of the work against tuberculosis in both France and Germany. In Paris the dispensary makes full use of the Assistance Publique and of various voluntary help associations, such as the Abri and the Amicale. In Germany, according to Fräulein Salomon, compulsory insurance has been the most powerful force in all attempts to improve the public health.

Elementary School Accommodation in Belfast.

On April 3rd a deputation attended at the monthly meeting of the city council of Belfast, from the Trades and Labour Council, relative to school accommodation in that city. Attention was drawn to the recent report of the inspector of National Schools in reference to serious cases of overcrowding which still continued in Belfast, and it was suggested by the deputation that such a condition of affairs could be remedied only through the agency of the municipality. The Lord Mayor (Mr. R. J. McMordie, M.P.) said it was a matter for the ratepayers to say whether they wished a Bill to be presented in Parliament giving the corporation the necessary powers to deal with the question. At present there was no school board, and the city council had no system of control over the schools, and they could, therefore, not levy a rate. The Lord Mayor also drew attention to the fact that when Dr. W. A. McKeown (who did so much to improve primary education schools in his lifetime) approached the Trades Council to get them to take some action, they would not do so, but he was glad to see now there had been some advance.

Ulster Hospital for Women and Children.

At the annual meeting in connexion with the Ulster Hospital for Women and Children, held on March 30th, it was reported that during the year 1910 there were 666 women out-patients, 6 intern maternity and 88 intern gynæcological cases. There were 240 extern midwifery and 230 intern children's cases. The total number of patients to whom the hospital afforded relief during the year was 1792. Through the efforts of the Lady Mayoress the additional fund necessary has been raised to enable the board of management to replace the existing old and inadequate structure by a new and larger hospital built and equipped according to the most modern requirements. The income of the hospital for the year was £979 18*s.*, and the expenditure amounted to £1165 18*s.* 9*d.*

Anti-vaccination in County Wexford.

The anti-vaccination crusade has been increasing in strength in more than one district in Ireland, but the greatest opposition to vaccination is shown in the Enniscorthy district of the county Wexford. For the past two years the Enniscorthy guardians have persistently declined to issue notices or to institute any proceedings under the Vaccination Acts, with the result that there are now said to be some 1400 defaulters in the union. The Local Government Board has so far done little to compel the guardians to execute their statutory duties, but its inspector visited Enniscorthy last week and informed the guardians that the Local Government Board would either dissolve the board of guardians by sealed order, or apply for a mandamus. Nevertheless, the guardians by a large majority declined to enforce the Acts.

April 13th.

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PARIS.

(FROM OUR OWN CORRESPONDENT.)

International Bureau of Hygiene.

IN compliance with the demands of the French Government, the standing committee of the International Office of Hygiene is holding at the present time extraordinary sittings in order to prepare the work of the International Sanitary Conference, which for France is to meet at Paris in the month of May, with the object of revising the International Sanitary Convention of December, 1903. In this session the committee will consider the formation of new regulations, in accordance with modern prophylaxis and the latest scientific discoveries since 1907, for opposing the entrance and propagation of cholera, yellow fever, and the plague into the different States, at the same time endeavouring to diminish as far as possible interference with navigation, commerce, and the conveyance of travellers of all kinds. Twenty-six States, represented by their permanent delegates or by special delegates, are taking part in this sanitary assembly. As soon as the standing committee has arrived at definite conclusions these will be communicated to all the Governments invited to Paris, enabling them to turn them to account during their participation in the Congress. The Hygiene Office will thus on this occasion play a part analogous to that assigned in the preparation of international congresses to the offices maintained by the different Governments at Berne for the protection of literary, artistic, and industrial rights of property.

Immigrants and Emigrants.

At the Ministère de l'Intérieur an emigrants' commission is charged with the study of questions of hygiene and legislation in connexion with the introduction of foreigners into France. At a recent meeting vaccination against small-pox of foreigners coming to reside in France has been made compulsory. Up to now they have been able to evade the obligation of vaccination and revaccination. As a matter of fact no law exists in France distinctly enforcing vaccination. But practically the same result is attained, for no pupil is admitted to any school or college without the production of a vaccination certificate, and all young men on entering on their military service are, as a matter of formality, vaccinated or revaccinated. In short, in so many situations and conditions the proof of vaccination is exacted that in reality very few French people can evade it. Thanks to this, small-pox has become very rare in France, and as it has been ascertained that the few cases occurring have been brought into France by foreigners their compulsory vaccination is held necessary. The Directeur of Assistance and Public Health, M. Mirman, has submitted to the same commission a general project concerning emigrants which contains important regulations. In the first place, a system of hygienic inspection of hotels frequented by immigrants is recommended. These hotels are in many cases centres of infection. In one district of Paris, for instance, in a street behind the Hôtel de Ville, there are a large number of these inns, inhabited by numerous Russian, Polish, or German immigrants, where the poor creatures are huddled together in wretched promiscuity, five or six persons in small and filthy rooms. These dens, on account of their dirt, foul smells, and vermin, are a source of annoyance to the neighbouring inhabitants. The police are almost powerless as regards these places, which are owned by foreigners and inhabited by their fellow countrymen under special conditions that place them outside the usual regulations for hotels. The proposed new regulation will enforce the cleansing of these centres of infection, and, if necessary, their destruction. The second part of M. Mirman's report concerns emigrants passing through France and embarking at French ports for the United States or other destinations, where permission to land may be refused them, so that they often return to France poor and wretched, and the difficulty of disposing of them becomes considerable. Already, at Havre, a service of medical inspection has been organised by the municipality and the navigation companies, which prevents the embarkation of those individuals who, it is easy to foretell, will not be allowed to land in America. It is essential to make this inspection more efficient and to impose on such emigrants a term of quarantine before their departure in French ports recognised by the American authorities. Thirdly, a permanent service of inspection of trains at frontier stations is insisted on, and the supervision of trains during the whole course of the journey. Hitherto the frontier inspection has been enforced only in times of epidemic.

The Misdeeds of Tobacco.

Dr. Ferrant of Lyons has just brought to light a new lesion to be put to the account of tobacco—viz., deafness. Actually the use of tobacco is dangerous in this respect only where there is a predisposition, as in the case of persons who are slightly deaf in one ear without perhaps being aware of it. This is by no means infrequent, and the infirmity is only discovered by chance, often in making use of the telephone, as imperfect sight of the right eye is often revealed only when trying to take aim with a gun. The predisposition of these half-deaf cases is often hereditary, or caused by frequent renewals of inflammation of the nasal mucosa or of the pharyngeal passage. It is thus in winter chiefly that smoking, even in moderation, affects the hearing. Dr. Ferrant has observed this result not only in great smokers, but also in the case of a woman, the wife of a bar-keeper, living in an atmosphere vitiated by the smoke of tobacco consumed by her customers. Those who snuff or chew tobacco are exposed to the same risks as smokers. The affection may become very marked and even incurable, persisting in spite of the disuse of tobacco. It is probably caused by the well-known effect of nicotine on the vaso-motor system, which produces vascular hypertensive phenomena which are not compensated in the cavity of the tympanum. Some years ago cases were observed in which the abuse of tobacco had led to diminution of the genital function and even to impotence. When we add the well-known injurious effects of nicotine on keenness of sight, on the memory, and on the production of arterio-sclerosis, effects well known to all medical men, we might be astonished at the large number of men who are heavy smokers were it not already proved that the soundest reasoning is powerless against the force of habit and the tyranny of toxins.

April 15th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Question of the Disciplinary Cancelling of Medical Diplomas.

AT the last meeting of the Medical Chamber of the city of Berlin and the province of Brandenburg the president of the court of honour stated that the court in its annual report to the Government had expressed the wish that it might be legally empowered to withdraw a medical qualification in the event of the holder committing a serious ethical misdemeanour. In Germany it always has been, and still is, the rule that a medical qualification may be withdrawn only when it has been obtained by some fraudulent means such as the handing in of forged certificates. A medical qualification legitimately acquired can never be altogether and absolutely withdrawn; it may, however, be temporarily in abeyance when the holder has been convicted of some crime by a court of law and sentenced to imprisonment with loss of civil rights, but the qualification is revived on the expiry of the prisoner's sentence and the restoration of his civil rights. These cases are comparatively rare, for the medical men concerned must have done something for which they are convicted and punished under the criminal laws of the country. A medical qualification could never be withdrawn merely on the ground of ethical misdemeanour, the courts of honour having power to inflict on offenders only a fine not exceeding 2000 marks (£100), a penalty which is not deterrent for certain medical men earning much money by discreditable proceedings. The petition of the Berlin Court of Honour is, however, not very likely to be granted, the general question being both complicated and difficult. The principal obstacle is that German medical qualifications are valid throughout the whole Empire, the legislation in that respect being in the hands of the Imperial Parliament, whilst the courts of honour are instituted by the legislatures of the individual States of the Empire and have authority only within the States to which they belong. Some States have no medical court of honour at all, and the courts which exist

show considerable differences in their composition and powers. For these reasons it would be necessary before legal sanction is given to the withdrawal of diplomas by courts of honour that courts of this description, all on an equality as regards authority, should be established in each State, because in the absence of such a system disreputable medical men would evade control by settling in places where there was no court of honour. Moreover, even if they did lose their medical qualification they would still be able to practise without it under the restrictions relative to unqualified practice, and as unqualified practitioners they would have the advantage of not being under professional control. To make the withdrawal of the qualification really a punishment unqualified practice must first be done away with, a contingency altogether impossible at the present time.

The Balneological Congress.

The Balneological Society has recently held its annual congress in Berlin, Professor Brieger being in the chair. The medical applications of radium formed the first subject of discussion. Professor Marckwald of Berlin described the different rays issuing from radium, and said that radio-activity was different according as the radiations proceeded from uranium or from thorium. The quantitative determination of radium in mineral springs should not be performed in less than from three to four hours, and should be conducted according to a uniform and internationally accepted system. Dr. Lachmann of Landeck said that "emanatoria" might be supplied with radium from natural springs containing that substance, and he recommended the establishment of such "emanatoria" at Gastein, Baden-Baden, Landeck, and elsewhere. Dr. Ruhemann of Berlin said that a solution of radio-active salts imparted to rusks or biscuits (*Zwieback*) a considerable degree of radio-activity which they retained for about three months. Dr. Eichholtz of Kreuznach said that for the administration of radium inhalation was preferable to the drinking of radio-active water. In the giving of radio-active water it was essential that the stomach should be empty and that the quantity of water should not be too small. Professor Goldscheider of Berlin spoke on the action of carbonic acid baths. He said that carbonic acid acted on the ends of the nerves in the skin and hindered the loss of heat. Dr. Kirch of Marienbad described experiments which he had made on the therapeutic value of waters containing alkaline earths and on the excretion of phosphoric acid in the urine where such waters had been used for several weeks. Other experiments showed the vital importance of calcium salts for the organism and the influence of a regular use of calcareous water on its development. The indications for the use of calcareous waters must therefore be enlarged. These waters were useful especially in cases in which the alkalinity of the blood was increased, as, for instance, in scrofulosis, in rickets, in diabetes, and in pregnancy. Waters containing free carbonic acid and ferro-hydrocarbonate in addition to calcium and magnesium hydrocarbonate were the best. Dr. Determann of St. Blasien read a paper on hot plunge baths. He said that these baths, when of a temperature from 37° to 45° C., had a strongly exciting action, especially on the muscular function. The patients first felt a sudden pain, and after a short pallor of the skin a well-marked hyperæmia occurred, the blood pressure increased, and the pulse became full and slow. The temperature of the body was but little increased because of the short duration of the bath. The treatment was indicated in spinal neurasthenia with weakness of the muscles, in the asthma of young persons, in peripheral pains, and especially in hysterical neuralgia. Dr. Selig of Franzensbad read a paper on the advantage of the dietetic use of sugar in diseases of the heart. He said that sugar was somewhat neglected as a constituent of the food of patients suffering from these conditions. The heart muscle, like every other muscle, was strengthened by the administration of a certain amount of sugar. Dates were especially to be recommended because of the large amount of sugar which they contained. In fatty heart sugar was indicated, a total deprivation of sugar being even dangerous in that disease. Dr. Senator of Berlin spoke on the dietetic treatment of affections of the upper respiratory organs. He said that a coryza was sometimes only a symptom of a disorder of metabolism which might be favourably influenced by appropriate dietetic treatment. A plain diet was therefore to be recommended in coryza. Sometimes coryza was the first symptom of disease of the kidney and disappeared when the amount of salt in the diet was reduced. Dr. Jacobi of Charlottenburg described a method of treating tuberculosis of the lungs by passive hyperæmia produced by placing the patient in Trendelenburg's position (elevation of the pelvis), which made the blood flow to the apex of the lungs and thus strengthened these parts. Dr. Schade of Kiel discussed the formation of calculi in the bladder and the possibility of dissolving them. He explained that calculi consisted of salts of the urine and of a colloid substance. They might be produced in a test-tube when a colloid substance was added to the salts. In the human body they developed by a precipitation of colloid substance and of salt. It was possible to get rid of them in two ways—namely, by dissolving either the salts or the colloid; the salts were soluble in acids and the colloid was soluble in antiformin, which converted the calculi into a muddy substance. Antiformin, however, could not be introduced into the bladder. Certain ferments had the same action as antiformin. The action of certain mineral springs on the formation of urinary calculi depended on their influence on the colloid substance and should be more accurately studied. Dr. Bickel of Berlin spoke on the value of compounds of phosphorus in "mastkur" (Weir-Mitchell treatment). He said that not every compound of phosphorus led to an accumulation of fat, but that lecithin was retained in the organism even when the latter already contains a great amount of phosphorus compounds. He had made very instructive experiments to show that patients undergoing "mastkur" with fat and albumin did retain the lecithin added to the food from time to time. The lecithin was first deposited in the liver, from which it was subsequently distributed throughout the body.

April 17th.

Obituary.

HENRY JAMES STOKES, M.D. EDIN., M.R.C.S. ENG., L.S.A.

WITH the death on April 12th of Dr. Stokes of Highbury, London, at the ripe age of 88, one of the few remaining links which connect the medical profession of our own day with that of the earlier nineteenth century disappears.

Henry James Stokes was born in 1823 at Gibraltar. He was the third son of Francis Stokes, colonial secretary at that station. Educated at Plymouth Grammar School, a noted establishment in those days, Henry James Stokes entered upon his medical training by apprenticeship to Dr. Adam Martin of Rochester, and subsequently became a student of University College, London, where he gave proof of his intelligence and application by taking medals in anatomy, physiology, surgery, and midwifery. He also filled the post of senior dresser to the famous surgeon Robert Liston, who had been appointed professor of clinical surgery in that school a few years previously. After obtaining the diplomas of Member of the Royal College of Surgeons of England (1843) and Licentiate of the Society of Apothecaries (1844) he proceeded to Edinburgh, where he graduated as Doctor of Medicine in 1845. The Edinburgh school at that date had associated with it names of permanent reputation. John Goodsir was teaching anatomy; William Pulteney Alison was professor of the institutes of medicine; Charles Bell, surgeon and philosopher, had died only three years before; James Young Simpson occupied the chair of midwifery, and in 1847 gave to the world his discovery of the anæsthetic value of chloroform. It is certain that Stokes, coming to this final stage of his training with a mind already prepared by study, did not fail to profit by the advantages which it afforded him. It is interesting to note in passing that among his Edinburgh friends was that genial man Dr. John Brown, the author of the fascinating "Horae Subsecivae," who, like himself, had been an assistant of Dr. Martin at Rochester. Dr. Stokes commenced medical practice in Islington in 1848, and continued to discharge its duties, esteemed alike by his patients and by his professional brethren, until his 79th year, and this notwithstanding the premonition of a slight hemiplegic attack two years previous to this date. For the past ten years he has

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lived in retirement, being practically confined to his bedroom. He married in 1851 the eldest daughter of the Rev. Thomas Barton Hill, vicar of St. Stephen's, Canonbury, who predeceased him in 1867, leaving three sons (two of whom have entered the medical profession) and six daughters. Dr. Stokes, as may be judged from this brief account of his life, was a man of much energy, an able practitioner, and devoted to his professional duty, of which he always entertained the highest conception. Of his intimates, the men of his own generation, none remain, but those of his younger brethren who have followed them at no great interval of time and who still survive regret in his death one who not only joined them to a distant and fruitful past but who earned for himself the respect of all who knew him.

FRANCIS JOHN MARSHALL, M.R.C.S. ENG., L.S.A.,

LATE RESIDENT MEDICAL OFFICER, ST. GEORGE'S HOSPITAL.

THE death of Mr. Francis John Marshall, which was announced in our issue of April 8th, has brought with it a sense of personal loss to all who have had any connexion with St. George's Hospital during many years, for Marshall, when he retired from the position of resident medical officer to that hospital some six years ago, had held his responsible post for 30 years with remarkable success.

The son of a Northamptonshire general practitioner, Marshall was educated at Epsom College, where he was head boy, and St. Mary's Hospital, and qualified as M.R.C.S. Eng. and L.S.A. Lond. in 1864. Those diplomas constituted at the time the usual double qualification. After holding the usual junior appointments at his own hospitals, he was appointed resident medical officer of St. George's Hospital in February, 1875. The scope of his very large and onerous duties he defined gradually for himself, the result being a smoothness of working in the hospital between the senior staff, the junior staff, and the nurses, to which those concerned in the administration of our great charities have often aspired with no success. Marshall was one of those naturally charitable men who can make allowances without being easy-going, so that it was a valuable education for house surgeons and house physicians to come under his kindly influence. On terms of personal friendship, sometimes very close, with the honorary staff of the hospital, he was none the less able to live in close intimacy with his juniors, who deferred readily to an authority over them the value of which they recognised, because the last thing that ever entered Marshall's head was to enforce such an authority in an unnecessary manner or to wear the appearance of possessing it. As a sort of permanent president of the fluctuating population of "The Cottage" (the wing of St. George's Hospital allotted to the resident staff), Marshall for many years dispensed boundless hospitality. The honorary staff, the residents, the past residents, the old students, and their friends met in his rooms constantly, and were always made to feel that "to look up Marshall" was no intrusion. Indeed, it was impossible not to feel that he enjoyed the position that was thrust upon him of being a centre of St. George's intimacy, while the good that his charitable nature exercised in this way was extraordinarily large, for persons of opposing views and widely differing methods of life, meeting in Marshall's rooms as his common friends, would see in each other qualities to respect which otherwise would have been unsuspected.

Into all his work Marshall carried the same kindness of heart, together with his gifts of organisation and his industry. As a rapid diagnostician he had acquired a wonderful acuteness, nor was he ever reluctant to take upon himself any responsibility which one of the junior residents wished to share with him. He always, and without hedging, recommended the course that was to be pursued until the time came that the responsibility could fall upon the shoulders of the honorary staff. In this way he kept a general supervision over the admissions which was of great value, while leaving full scope for originality on the part of the residents. On his retirement from office at the hospital in 1905, which he did in recognition of failing health and amidst expressions of universal regret, Marshall continued to remain in touch with many of his old hospital friends, so that the fact that his hold upon life was a very precarious one was known to many people before the end came. He had cardiac trouble, emphysema, and asthma, and in April, 1909, had the misfortune to break some ribs. He never left his house afterwards save in a bath-chair, and succumbed finally to heart failure and dropsy.

He married late in life. He was cremated at Golder's Green, the funeral service being held at St. George's Hospital Chapel.

WILLIAM WALKINSHAW MAC REIGHT, M.D. GLASG., M.R.C.P. LOND., M.R.C.S. ENG.

Dr. William Walkinshaw Mac Reight, whose death occurred last week at his residence, "Tulchan," Torquay, where he passed the last 50 years of his life, had reached the venerable age of 83. He retired from practice some 20 years ago. After studying at Dublin and Glasgow, he became a Member of the Royal College of Surgeons of England in 1849, and in the following year took his M.D. at the University of Glasgow. In 1859 he became a Member of the Royal College of Physicians of London. Dr. Mac Reight was for many years physician to Torbay Infirmary and to the Western Consumption Hospital. He was consulting physician to the Torbay Hospital up to the time of his death.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced: Dr. William W. Mayo of Rochester (Minnesota), the father of two eminent American surgeons, through whom the name of Mayo has become well known. He was 91 years of age.—Dr. V. Cozzolino, professor of otology and laryngology in the University of Naples.—Dr. B. Sadun, formerly professor of medical jurisprudence and mental diseases in the University of Pisa.—Dr. Arragon, lecturer on materia medica in the Limoges Medical School.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Vienna:* Dr. Chvostek, who has hitherto only held the rank of Extraordinary Professor, has been appointed to the newly established "Fourth" chair of Medicine, which is specially concerned with neurology and has connected with it the medical department of the Sophia Hospital.—*Washington (University of St. Louis):* Dr. Fred. T. Murphy of Boston has been appointed to the chair of Surgery.

AMALGAMATION OF THE WOMEN'S HOSPITAL AND LYING-IN CHARITY, BIRMINGHAM.—The Birmingham Lying-in Charity, which for nearly 70 years has carried on important work, and three years ago erected a maternity hospital for in-patient work and the training of midwives, finds itself, in spite of all efforts, unable to meet the heavy expenditure. In three years the deficiency had reached £2000. At the annual meeting of the charity, therefore, on March 28th, it was announced that the work would be taken over by the Birmingham and Midland Hospital for Women as from the beginning of the present year. The financial position has been a continual anxiety since the opening of the new hospital three years ago. It was opened free from debt, but, largely because the charity was not widely known and the value of its work as a training school little understood, the income had not increased sufficiently to meet the larger expenditure. To close the hospital and confine the operations of the charity to out-patient work, as hitherto, would be a public misfortune and would defeat the object of those who so generously provided funds for its erection and equipment. The alternative was to amalgamate with a larger institution. The Women's Hospital was willing to take over the entire work and to carry it on as a branch of their institution upon certain conditions, among which were that the existing debt was paid off and that an adequate number of the members of the present board of the lying-in charity would serve on the branch committee. To meet the first condition sufficient donations have been offered, and there was no difficulty about the second condition. It is not intended to do away with the individuality of the lying-in charity in its own line of work. It will be a branch of the Women's Hospital in the sense that the latter will assume ultimate

financial responsibility and the consequent control, but it will have its separate staff and administrative organisation, and must collect its own income by way of registration and training fees, subscriptions, donations, grants, and legacies as heretofore. The committee's report was adopted by the governors, and at the annual meeting of the Women's Hospital authority was given to the committee to take over the Lying-in Charity, Mr. J. S. Nettlefold urging that its work was complementary to their own. It was preventive, whilst theirs was curative, and if the preventing work was discontinued the demand for curative work would increase.

THE SEWERAGE OF CREDITON (DEVON).—At the last meeting of the Crediton urban council it was decided to ask the sanction of the Local Government Board for the approval of a sewerage scheme for the town at an estimated expenditure of £6600.

WILTS NURSING ASSOCIATION.—The seventh annual meeting of the Wilts Nursing Association was held recently at Devizes under the presidency of the Earl of Pembroke. The report stated that there were 35 branches of the society employing nearly 100 nurses. The income amounted to over £700, and a favourable balance remained at the close of the year.

PRESENTATIONS TO MEDICAL PRACTITIONERS.—At a recent meeting in connexion with the Red Cross Society held at St. Just-in-Penwith, Cornwall, Mr. Robert Garven Nesbitt, L.R.C.P., L.R.C.S. Irel., J.P., and Mr. James Robert Marr Richmond, L.M.S.S.A. Lond., were each presented with a silver cigarette-case as a mark of appreciation for their services as honorary instructors.

THE ROYAL CORNWALL INFIRMARY, TRURO.—The committee of the Royal Cornwall Infirmary has recently appealed for £1500 for a fund for building and enlarging the infirmary so as to provide for a new ophthalmic department. Up to the present £1246 have been subscribed. The bequest of the late Miss C. C. Williams of £6000 will provide the necessary sum required for the upkeep of the additional building.

NEW HOSPITAL FOR WIMBLEDON.—The new cottage hospital to be erected at The Rush, Merton, in place of the present small hospital in Merton-road, is shortly to be commenced, and the foundation-stone is to be laid at the beginning of May. At the annual meeting of subscribers just held it was reported that £7000 of the £10,000 required were in hand, thanks largely to the efforts of a special ladies' association, and that the council of the King's Fund were about to donate £1000. Since the old hospital was opened in 1900 2171 patients had undergone treatment. Replying to a question put on behalf of the Hospital Saturday Fund, the chairman said there would be no out-patients' department at the new hospital, as this would not be fair to the general practitioners in a district like Wimbledon. Mr. F. Deas, one of the honorary surgeons, said the medical staff would be glad that this was the last year they would have to perform their delicate tasks in the present cramped building. Votes of thanks were passed to the honorary medical staff, the matron, and the nursing staff.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Easter Recess.

THE Easter Recess this year has been of very short duration. The House of Commons adjourned on Wednesday, April 12th, and reassembled on Tuesday, April 18th. Owing to the appropriation of Parliamentary time to Government business little or no progress has been made with measures brought forward by private members.

Instruction in Hygiene in Elementary Schools.

Dr. ADDISON'S Elementary Schools (Instruction in Hygiene) Bill has been published. It provides that "each local education authority shall arrange that during each week during the school terms simple instruction in hygiene and the care of health suitable to the age and understanding of the children shall be given to all children attending public elementary schools, and in particular shall arrange that each girl of the age of 12 years or more shall be adequately instructed in the care and feeding of infants. The instruction shall be such as shall be approved by the Board of Education." The Bill is supported by Mr. ARTHUR GLEN, Mr. CHARLES BATHURST, Mr. BUTCHER, Mr. FENWICK, Mr. MUNRO FERGUSON, Mr. JAMES HOPE, Mr. ARTHUR HENDERSON, Sir JOSEPH LARMOR, Mr. CHIOZZA MONEY, Mr. F. E. SMITH, and Mr. EUGENE WASON.

HOUSE OF COMMONS.

FRIDAY, APRIL 7TH.

Sale of Poisons in America.

Mr. NEVILLE asked the Secretary of State for the Home Department whether he was aware that in the United States of America no poisonous substance could lawfully be sold by retail unless the bottle or other receptacle bore a label stating the name of the poison, its character, whether alkaloid, narcotic, or otherwise, and the appropriate antidote, remedy, or treatment to be used in case the poison was improperly taken or applied; and, if so, whether he would consider the advisability by Order in Council or otherwise, under the Poisons and Pharmacy Acts, of making regulations that a label giving similar information should be affixed to every bottle or receptacle containing poison sold by retail in this country.—Mr. CHURCHILL wrote in reply: I am informed that the Privy Council Office has no knowledge of the American regulations referred to. No evidence has reached that office which would show that there is any pressing need for an amendment of the existing poison regulations in the direction indicated by the question, and it is considered doubtful whether it is desirable to multiply the purely mechanical precautions of the kind suggested.

Small-pox in London.

Mr. PHILIP FOSTER asked the President of the Local Government Board whether he could give the number of small-pox cases in London during the last four weeks and the percentage of vaccinated, revaccinated, and unvaccinated cases amongst them.—Mr. BURNS furnished the following reply: The following table gives the particulars required respecting the patients removed to the hospitals of the Metropolitan Asylums Board during the four weeks ending April 1st:—

—	Ages of small-pox patients.				Total cases.	Deaths among these cases.
	0–10.	10–20.	20–35.	35 and over.		
Vaccinated ...	0	1	2	2	5	0
Unvaccinated ...	4	1	0	0	5	1

None of the cases are stated to have been revaccinated.

Health Visitors.

Mr. CHARLES BATHURST asked the President of the Local Government Board whether he could state in how many cases women health visitors had already been appointed, in the absence of any Health Visitors Act, either by county councils or by rural or urban district councils, and by virtue of what Act of Parliament had this been done.—Mr. BURNS wrote in reply: I am unable to state in how many cases women have been appointed to perform the functions of health visitors by county and district councils, nor am I aware of the authority under which such appointments have been made. In several instances officers, such as inspectors of midwives, school nurses, and assistant inspectors of nuisances, have been utilised to give advice as to the nurture and care of infants.

TUESDAY, APRIL 11TH.

Housing in South Wales.

Mr. KEIR HARDIE asked the Prime Minister whether he was aware that there was a scarcity of suitable houses for working people in nearly every industrial district in South Wales, and that as a result there was much overcrowding, leading to a high mortality rate from consumption and other preventable diseases, and that rents were high; and whether he would consider the advisability of recommending the appointment of a small commission to collect evidence and report on the extent of the evil, and make recommendations on the best and speediest method for overcoming it.—Mr. BURNS replied: The Prime Minister has asked me to reply to this question. I am aware that there is a scarcity of suitable houses for working people in many industrial districts in South Wales, and of the results of such scarcity. Something, however, is being done to remove the scarcity of dwellings. Since Jan. 1st, 1910, I have sanctioned loans amounting to £67,540 for the provision by local authorities of houses for the working-classes in South Wales and Monmouthshire. Six other proposals for the erection of such houses are before me, and in an advanced stage. My honourable friend may rest assured that this matter is receiving my serious attention, and as regards those districts in which nothing adequate has been done in the past, I am awaiting the reports of the medical officers of health for the past year before deciding what further action should be taken. I scarcely think that the appointment of the suggested commission would be likely to advance matters, and for the present at any rate I prefer to rely on the provisions of the Housing, Town Planning, &c., Act, 1909.

Tuberculosis in Cows.

Mr. CHARLES BATHURST asked the Parliamentary Secretary of the Board of Agriculture whether, in view of the popular apprehension as to the consumption of raw milk arising from uncertainty as to the number of milch cattle either affected with tuberculosis of the udder or visibly emaciated by tuberculosis, the Government would, by legislative enactment or administrative order, require compulsory notification to a local authority, subject to a penalty for non-compliance, of all such cases occurring within its area, and thus ascertain the locality and extent of such sources of danger to human health.—Sir E STRACHEY replied: The question of the issue of an order is now under consideration, but the question of compensation must also be considered.

Plague Infection.

Mr. KEIR HARDIE asked the Under Secretary of State for India whether he was aware that rats were as subject as human beings to plague from infected soil, and that the appearance of sick or dead rats in a house was often the first indication the inhabitant had of danger

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from this source; and what special action was being taken by the Government of India to remove people from infected soil, the main cause of the continuance and spread of plague, in addition to destroying rats which were only at most a secondary cause in the spread of infection.—Mr. MONTAGU replied: Exhaustive inquiry has shown that the plague bacillus does not live in the soil. It speedily dies outside the bodies of men or other animals. It is not, therefore, thought necessary to invite the people to submit themselves to the inconvenience of evacuating their houses unless the disease is present or is imminent in a locality.

WEDNESDAY, APRIL 12TH.

Withington Workhouse Infirmary.

Dr. ADDISON asked the President of the Local Government Board whether his attention had been drawn to the conditions existing at the Withington Workhouse Infirmary, South Manchester, to the great overcrowding of the children's wards, to the high rate of mortality amongst the children, to the insufficiency of accommodation for the isolation of infectious cases, and to other matters in respect of which the accommodation and equipment of the institution were inadequate to the needs of the district; and whether he would direct that a full inquiry be made into the subject, and take such steps as would remedy the existing state of affairs with the least possible delay.—Mr. BURNS wrote in reply: I am aware of the conditions existing at the Withington Workhouse Infirmary, and I have seen a newspaper report giving particulars respecting overcrowding and a high rate of mortality among the children. The statements contained in this report are, I am informed by my inspector, in several respects not quite accurate. The number of children in the infirmary has increased more rapidly than could have been anticipated, but I understand that efforts are being made by the guardians to cope with the difficulty. Two new blocks for the infirm are almost ready to be opened, and an arrangement has been made with the Prestwich guardians to utilise some of the accommodation which that body can spare in their new infirmary. It is anticipated that these arrangements will provide a small margin, but the matter will continue to have my attention.

Housing Conditions at Ystalyfera.

Mr. JOHN WILLIAMS asked the President of the Local Government Board whether his attention had been drawn by the medical officer of health's report for the Pontardawe district, or by any other form of communication, to the existing insanitary and defective housing condition of Ystalyfera; and whether he would take steps to ascertain what action the local authorities purposed taking to remedy the said state of things.—Mr. BURNS (in a written reply) answered: I have not yet received a copy of the report of the medical officer of health for the year 1910, but I am obliged to my honourable friend for drawing attention to this matter, and I have asked that the report may be forwarded to me without further delay.

Royal Commission on Tuberculosis.

Mr. CHARLES BATHURST asked the President of the Local Government Board whether the Royal Commission on the relations between human and bovine tuberculosis, which issued its third interim report in January, 1909, was still sitting; and whether it proposed to issue a final report, and, if so, when.—Mr. BURNS furnished the following written answer: I understand that the final report of this Commission will be issued early in May and that the appendices will follow soon afterwards. All experimental work finished over six months ago, and the Commission has been occupied since in drafting the report.

The Adulteration of Bread.

Mr. CHARLES BATHURST asked the President of the Local Government Board whether, in the opinion of the medical advisers of the Board, after considering Dr. Hamill's report on the constitution of baking powders and self-raising flour, the prevalence of appendicitis and other intestinal disorders in this country was attributable, either wholly or in part, to the presence of calcium sulphate or plaster-of-Paris in such preparations.—Mr. BURNS said in reply: Present knowledge does not, as I am advised, enable a statement to be made as to whether food containing insoluble matters such as calcium sulphate may be responsible for the production of appendicitis or of other intestinal disorders.

Mr. BATHURST: Is the right honourable gentleman aware that many eminent medical men in London hold the view that appendicitis is due to that cause?—Mr. BURNS: I believe some do and that a good number do not.

Mr. BATHURST asked the right honourable gentleman whether, in view of the report of the Board's inspectors on the sophistication, decolouration, and so-called improvement of flour, he would consider the advisability of prohibiting, either by legislative enactment or by administrative order, the sale of any article as bread, without any qualifying prefix, which was made out of any substance or substances other than wheat flour, or which had been deprived of any of the contents of the wheat grain other than bran or fibre.—Mr. BURNS replied: The question of taking action in the direction suggested and other questions arising out of the reports are at present receiving my consideration.

Mr. BATHURST: Is the right honourable gentleman aware that under the existing law anything can be sold as bread whatever its constituents or whatever may have been withdrawn from the flour or added to it?—Mr. BURNS: That is an interpretation given to the existing law by some people, but I do not share that view.

Vaccination and Small-pox.

In the course of the debate on the motion for the Easter holidays,

Dr. HILLIER drew attention to the administration of the Local Government Board in regard to certain matters of public health. He had every admiration for the public health administration of the Department as a whole, and he knew there was no branch of his work in which the President took a keener interest than in that of public health. He regretted, however, to feel it his duty to call attention to what he regarded as the very unfortunate prejudice which appeared to influence a certain branch of the public health administration. The subject to which he referred was vaccination and the exemptions from vaccination which were growing at an enormous rate throughout the country. During the first half of last year there were 456,533 births, and of those 110,581 had received exemption certificates. That amounted to nearly 25 per cent. of the newly born. There had been a small epidemic of small-pox in London. According to figures which had been given him on March 14th there had been 54 cases. Forty-one of these were vaccinated, of whom two died. Thirteen were unvaccinated, of whom six died. When he pointed out the tremendous difference in the mortality amongst vaccinated and unvaccinated cases respectively, the House would admit that the question was one of immense national importance. He, on the occasion of a visit on a scientific errand to Berlin, had once had interviews with Count von Posodowski, the German Minister of the Interior, who was very much interested in public health legislation and practice in this country. "To us Germans," remarked the Count, "it is a matter of great surprise that you English gave the world vaccination, and yet you keep small-pox."

An HON. MEMBER: How much?

Dr. HILLIER: How much? 2500 deaths in 1902. Germany had a law which enjoined vaccination and revaccination, and the Germans had practically stamped out small-pox in their country. The effect of vaccination and revaccination was that it reduced small-pox almost to a negligible quantity. The risk of allowing the population to go unvaccinated could not be run. Small-pox was always liable to be imported. Mistakes in diagnosis had arisen, and they would always arise. He could assure honourable Members that it was not such a simple thing as some people supposed to determine at the first blush whether a case was small-pox or chicken-pox. Many of our medical men had had very few opportunities of ever seeing small-pox, and therefore they were not too familiar with it. Therefore honourable Members could not rely upon the disease being brought to the notice of the authorities at the moment it arose. The danger of it spreading was very much increased when 25 per cent. of the children in the country were going unvaccinated. He was not going to propose the re-enactment of compulsory vaccination. But was the best under the existing law being done? At the present time after the registration of a child the parent was furnished with what was known as Certificate A, calling his attention to the fact that the child must either be vaccinated and a certificate furnished to that effect, or a certificate of conscientious objection furnished. It was with regard to these forms that he desired to enter a respectful protest. Let them take the last form that was sent to the child's parent. It was in the following terms:—

> "I hereby give you notice that on a certain day your child will be four months old, and that unless within seven days from that date I shall have received from you or from the public vaccinator a certificate of the successful vaccination of the said child, or a statutory declaration made under Section I. of the Vaccination Act of 1907 within four months of the birth of the child, or some other legal excuse for the non-vaccination of the child, it will be my duty to notify the case to the public vaccinator who will then in due course visit the child's home and offer to vaccinate the child."

And so on. That was going a bit too far. Exemption was now to be made, not only extremely simple, but it was to be brought before the notice of the ordinary working-class householder, so as to lead him to suppose that vaccination was really a perfectly superfluous operation, and that it was merely a choice between one piece of paper and another. He argued that this led to the omission of parents to have their children vaccinated in order to save trouble. He advocated that there should be sent with the first certificate to the parents a circular pointing out in moderate terms the value of vaccination as a means of protection against small-pox and advising parents to take advantage of the facilities for vaccination offered to them, and also reassuring them further about the danger with regard to lymph in so far as it was most carefully obtained and provided by the Local Government Board. Some circular in these terms would be converting an irrational into a rational procedure.

Mr. GUINNESS associated himself with the remarks of Dr. Hillier. Medical inquiry had established the existence of cycles of small-pox, and he believed that the cycle was something over 30 years. According to the figures which he had seen the next epidemic was most likely to take place in the ensuing autumn, about October. The Government had a great responsibility, and he would urge the President of the Local Government Board no longer to encourage people to avoid vaccination but to take some steps to educate parents before it was too late as to the real advantages of preventive measures, and to take steps to prevent the recurrence of the scourge, which, fortunately, the present generation had almost forgotten.

Mr. BURNS (replying to the discussion) said: The honourable Member for Hitchin (Dr. Hillier) paid the Local Government Board a well-deserved compliment for the administration of several branches of public health. I think he might have gone further and said that in no country in the world had there been such a reduction in the death-rate, such a diminution in infant mortality, and such an abatement in the scourge of tuberculosis, typhus, typhoid, and many other diseases. I am very much obliged to a medical man paying such a compliment to my department. It could be confirmed by facts and figures. But the honourable Member descended from the general which was complimentary to the particular which was not quite so complimentary, and he tried to prove that the eulogy which was due to the Local Government Board in the combating of other diseases was not equally due in the combating of small-pox. The epidemic to which the honourable gentleman has referred as justifying his criticism of the Vaccination Acts in this country is after all not the serious thing which one would judge from the general tone of his speech. The facts are these. We have had in the East-end of London 58 cases of small-pox. Of these, 42 were vaccinated and two patients died. There were 16 unvaccinated and seven died. I decline to deduce anything from these figures either for or against vaccination in a small epidemic of this kind. I decline to deduce anything like the panic suggestion underlying but not brought to the surface of the honourable Member's speech to the extent which I would have expected.

Mr. CHANCELLOR: How many cases were too young to be vaccinated?—Mr. BURNS: I am going to leave the facts in simple proportion as I have stated them. Until we get complete and final figures in regard to ages, the incidence of the disease, revaccinations, and so forth, I think that it would be premature and unfair to either side in this controversy to do other than state the simple facts. If I were not a Minister I would retort on these simple facts that I doubt if we would have had a single death, vaccined or unvaccinated, had it not been that there was a mis-diagnosis of a case of small-pox as chicken-pox. Those who run may read, and they may deduce from that whatever they like, and I am not at all alarmed by the comparison made with Germany. The honourable Member made a very fair point, if he will allow me to say

, when he referred to the statement of the German who said to him, 'Britain has given the world vaccination and has kept small-pox." hat is a statement of a broad and sweeping kind that has got to be ualified by existing facts. What are the facts? Just in proportion as recent years exemptions have gone up from 4 to 30 per cent., so deaths om small-pox have declined. The facts are these. I am right in ving these figures with regard to London. During the time that I ave had the honour of being at the Local Government Board the llowing have been the deaths from small-pox in a city of four and a lf million inhabitants. In 1906 there was no death; in 1907 there was death; in 1908 there was no death; in 1909 there were two deaths; d in 1910 there was no death. Therefore, in five years there have been ly two deaths in a city of four and a half million people. Not even ermany or Berlin can transcend those figures by the increasing eanliness, increasing sobriety, and greater attention paid both by the mmunity and by individuals to removing all causes of small-pox and early every other disease.

Dr. HILLIER: What about measles?—Mr. BURNS: The honourable ember is trying to get me off the rails in regard to small-pox by iking about measles. Even there I decline to be moved, because in e last six months, when many people have been panic-stricken about plague, Asiatic plague, small-pox, and measles in London, the cal Government Board stuck to their job. We have hunted measles e sleuth-hounds. The result is a general decrease. My honourable ends suggest that we should in some respects alter Form Q.

Dr. HILLIER: Certificate A.

Mr. BURNS: But the honourable gentleman said that he would not pose any re-enactment of compulsory vaccination. If he is consistent and logical he ought to do so. He said that it would not be actical politics. Then he asked whether under the existing law we re doing our best to combat small-pox. The figures which I have duced with regard to London—and similar figures can be adduced with gard to England and Wales—have proved that we are. The other suggestion is that we have given a definite indication to parents to exempt emselves by our circular of Jan. 28th, 1910. The only thing have done is this. The law was altered because a certain misprehension had to be removed and the circular of Jan. 28th, 1910, was ply to point out that the exemption declaration must be made thin four months of the birth of the child under the law as it now is, against the old instruction and old form that it was to be made thin four months and seven days in order to obtain a certificate of emption. That is the only thing that the Government has ne and it is the only justification for the criticism to which have been subjected. We have practically adhered, with the ception of providing for four months as against four months seven days, to the prescribed forms that were left to as a heritage of vaccination legislation by the protagonist prophylactics the right honourable gentleman the Member Wimbledon (Mr. Chaplin), who was my predecessor at the cal Government Board some years ago. Beyond adopting the cular and form nothing has been done, and it is a fact that exemps have not increased through an alteration of the law. Mortality diminished. I draw no inference from that fact, and for the first ne in the four years since the Act was altered have we heard the icy of the Local Government Board adversely criticised in regard to administration of this particular code of sanitary laws. After the ple explanation I have given as to the reason why the instruction altered in January, 1910, and the new Form Q was adapted to the nge in the law made in 1907, it seems to me that I have thing further to add, except that I cannot accept the suggestion that we should supply on Form Q or any other form a simple and elementary statistics on the subject of vaccina-. I have been 20 years a Member of this House, and if there one subject on which I should be disinclined to quote statistics any source or any section it is upon the thorny subject accination. Instead of listening to the suggestion of the honourable tleman, with all respect, it seems to me that what we have to do as department of public health is to hunt disease of all kinds and criptions in every shape and form, and with all the means at our posal. We have achieved such success as to warrant the compli-t, generous and full, which the honourable Member paid to me and department. Instead of diverting my energies in the direction ich honourable Members have suggested, they will perhaps allow to go on with the work. I believe that all this fear and panic, all talk about plague and small-pox, is due to misconception and misprehension of social facts. These diseases are in a very different tion from what they were in 10, 20, 30, or 40 years ago, and a creditable and a happy circumstance that I, as Minister ealth for England and Wales, am enabled to state that in regard to administration of public health, no other country is comparable to , and I am pleased to have heard such hearty recognition of our rts from the different speakers this afternoon.

r. H. W. FORSTER pointed out that the right honourable gentleman not answered the simple question put to him as to whether he ld take steps with a view to influence the opinion of parents as to desirability of having their children vaccinated. The honourable bers who had spoken were not asking the right honourable gentlen to do anything further than this, to give the poor and uneducated nts some meed of advice as to the safety to be found in vaccination. regretted that the practice of arm-to-arm vaccination ever took place. as owing to this practice that the prejudice against vaccination was y created, and if pure calf lymph had been used from the beginthere would have been no prejudice against vaccination at the ent time. What could be done was to give the people a chance of ing from the Local Government Board and its officers that there value in vaccination. He hoped that the right honourable gentlewould follow this course.

. CHAPPLE said that there could be no doubt whatever of the cy of vaccination in the prevention of small-pox. He pointed out dangers which existed in the congestion of slums, for the spread mall-pox, and the need for sanitary measures. He was prepared he time to arrive when vaccination could be dispensed with, but time had not yet arrived when this important weapon in the attack motic diseases could be laid aside.

. HUNT called attention to the existence of trachoma in aliens who to this country. He expressed fears that the restrictions of the ations had been relaxed, and that as a consequence people in country were being exposed to greater risks of contracting the e.

TUESDAY, APRIL 18TH.

Gun Deafness in the Navy.

Mr. FITZROY asked the Secretary to the Admiralty whether he was aware that gun deafness was prevalent among both officers and men of the navy, and whether he would issue an order from the Admiralty making it compulsory on both officers and men to wear some form of ear protection when gun-firing was taking place on board ship.—Mr. MACNAMARA replied: Cases of gun deafness undoubtedly occur, but there are no grounds for attributing any considerable number of invalidings for diseases of the ear to the effects of gun-fire. Protective material is already provided and can be drawn by ships. The use of cotton-wool, a supply of which is always to hand as a protective material, is now so general that it would appear to be unnecessary to issue the order suggested by the honourable gentleman.

Aliens and Trachoma.

Mr. HOUSTON asked the Secretary of State for the Home Department whether he was aware that trachoma was increasing in this country; whether the introduction and increase of this disease was due largely to the immigration and presence of undesirable aliens; whether he would introduce more drastic legislation to exclude these diseased and undesirable aliens from entering this country; and whether he would state what measures, if any, would be adopted by the Government in connexion with undesirable aliens generally with a view to their expulsion.—Mr. CHURCHILL wrote in reply: I am not aware of any evidence that trachoma is increasing in this country. I know that the disease exists widely among aliens in certain parts of the United Kingdom, and it is the fact that alien immigrants are from time to time found on inspection under the Aliens Act to be suffering from trachoma. In these cases leave to land can be, and is, refused. As at present advised, I see no reason for further legislation on this point.

BOOKS, ETC., RECEIVED.

CHURCHILL, J. AND A., London.

Sight-Testing Made Easy. By W. Wright Hardwicke, M.D. St. And., M.R.C.P., L.R.C.S. Ed. Second edition. Price 2s. 6d. net.

COLLINGRIDGE, W. H. AND L., City Press Office, Aldersgate-street, London, E.C.

The City of London Year Book and Civic Directory for 1911. Price 5s. net.

CONSTABLE AND CO., LIMITED, London.

Clinical Lectures on the Acute Abdomen. By William Henry Battle, F.R.C.S. Price 4s. net.

The World of Dreams. By Havelock Ellis. Price 7s. 6d. net.

The Corner of Harley Street. Being Some Familiar Correspondence of Peter Harding, M.D. Price 4s. 6d. net.

DORNAN, WILLIAM J., Philadelphia.

Transactions of the American Surgical Association. Volume the Twenty-eighth. Edited by Archibald MacLaren, M.D., Recorder of the Association. Price not stated.

ENKE, FERDINAND, Stuttgart. F. BAUERMEISTER, Glasgow.

Geschichte der Medizin. Von Dr. Max Neuburger. Zwei Bände. II. Band. Erster Teil. 2. Hälfte. 1911. Price M.8.20, or 8s. 5d.

Atlas der Kristallformen und der Absorptionsbänder der Hämochromogene. Eine für Physiologen, Pharmakologen und Medizinalbeamte bestimmte Studie. Von Walter J. Dilling, M.B., Ch.B., der Universität Rostock. Mit einem Vorwort von Prof. Dr. R. Kobert. Text in Deutscher und Englischer Sprache. (Title of the English version—Atlas of the Crystals and Spectrum of Hæmochromogen, with a Description of the Mode of Formation of the Crystals. A Study designed for Use in the Departments of Physiology, Pharmacology, and Medical Jurisprudence.) Price of the Text in English and German, bound together, 29s.

FISCHER, GUSTAV, Jena.

Die Lehre von der Krebskrankheit von den ältesten Zeiten bis zur Gegenwart. Von Sanitätsrat Dr. Jacob Wolff, Prakt. Arzt in Berlin. II. Teil. Price M.36; bound, M.39.

Handbuch der Anatomie und Mechanik der Gelenke unter Berücksichtigung der bewegenden Muskeln. Von Rudolf Fick der Universität Innsbruck. Dritter Teil: Spezielle Gelenk- und Muskel-mechanik. Price M.33; bound, M.33.50. (Bildet zugleich die 20. Lieferung des "Handbuchs der Anatomie des Menschen," herausgegeben von Prof. Dr. Karl von Bardeleben. Zweiter Band. Erste Abteilung. Dritter Teil.)

Handbuch der Gesamten Therapie. In sieben Bänden. Herausgegeben von Dr. F. Penzoldt und Dr. Stintzing. Vierte umgearbeitete Auflage. Sechzehnte Lieferung. Price, M.4.50. (Preis des vollständigen Werkes: 100 Mk., geb. 117 Mk. 50 Pf.)

Theorie und Praxis in der Beurteilung der Gicht auf Grund einer Erfahrung in 6000 Fällen. Von Sanitäts-Rat Dr. Gemmel, Badearzt in Bad Salzschlirf. Price, M.2.50.

Die Cholesterinesterverfettung (Cholesterinsteatose). Eine differentialdiagnostische morphologische Studie über die in den menschlichen und tierischen Geweben vorkommenden Lipoide. Von Dr. Rinya Kawamura. Price M.4.50.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

Oxford Medical Publications. "606" in Theory and Practice. By Geheimrat Professor Dr. Paul Ehrlich and J. E. R. McDonagh, F.R.C.S., Surgeon to Out-patients, London Lock Hospitals. Price 7s. 6d. net.

GREEN, WILLIAM, AND SONS, Edinburgh.

Maternity Primer. By A. H. F. Barbour, M.D., LL.D., Physician to the Edinburgh Royal Maternity Hospital. Price 1s. net.

GRIFFIN, CHARLES, AND COMPANY, LIMITED, London.

An Introduction to the Theory of Statistics. By G. Udny Yule, Honorary Secretary of the Royal Statistical Society of London. Price 10s. 6d. net.

PRINT IN BINDING

KEENER, GEORGE, AND CO., 16A, Red Lion-square, London.

Medical Guide and Monograph Series. Diagnosis and Treatment of Diseases. Aphorisms, Observations, and Precepts on the Method of Examination and Diagnosis of Diseases, with Practical Rules for Proper Remedial Procedure. By Henry A. Cables, B.S., M.D., Professor of Medicine and Clinical Medicine of the College of Physicians and Surgeons, St. Louis. Price 10s. 6d. net.

Bismuth Paste in Chronic Suppurations, its Diagnostic Importance and Therapeutic Value. By Emil G. Beck, M.D., Surgeon to the North Chicago Hospital, Chicago, Ill. With an Introduction by Carl Beck, M.D., and a Chapter on the Application of Bismuth Paste in the Treatment of Chronic Suppuration of the Nasal Accessory Sinuses and the Ear, by Joseph C. Beck, M.D. Price 10s. 6d. net.

KING, P. S., AND SON, Orchard House, Westminster, London.

On the Production of Pure Milk. An Account of the Methods Employed at the Infants Hospital Farm. By Ralph Vincent, M.D., M.R.C.P. A Lecture delivered in the Lecture Theatre of the Hospital on February 14th, 1911. Price 6d. net.

KREIDEL'S (C. W.) VERLAG, Wiesbaden. F. BAUERMEISTER, Glasgow.

Analyse des Harns. Zum Gebrauch für Mediziner, Chemiker und Pharmazeuten, zugleich Elfte Auflage von Neubauer-Huppert's Lehrbuch. Bearbeitet von A. Ellinger, Königsberg; F. Falk, Wien; L. J. Henderson, Boston; F. N. Schulz, Jena; K. Spiro, Strassburg i.E.; und W. Wiechowski, Wien. Erste Hälfte. Price M.15, or 15s.

LAURIE, T. WERNER, Clifford's Inn, Fleet-street, London.

Origins and Meanings of Popular Phrases and Names. By Basil Hargrave. Price 6s. net.

LEWIS'S LIBRARY, 136, Gower-street, London, W.C.

Catalogue of Lewis's Medical and Scientific Circulating Library. Supplement, 1908-1910. Price 6d. (Free to Subscribers.)

LONDON PUBLICITY COMPANY, LIMITED, 379, Strand, London, W.C.

Faith, Medicine, and the Mind. By Charles Reinhardt, Doctor of Medicine and Doctor of Surgery of the University of Brussels. Price 5s. net.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

New Ideas on Inorganic Chemistry. By Dr. A. Werner, Professor of Chemistry in the University of Zürich. Translated, with the Author's sanction, from the Second German Edition. By Edgar Percy Hedley, Ph.D., A.R.C.Sc.I., Lecturer and Demonstrator in Chemistry, University of Birmingham. Price 7s. 6d. net.

MACMILLAN AND CO., LIMITED, London.

Human Physiology. By Professor Luigi Luciani, Director of the Physiological Institute of the Royal University of Rome. Translated by Frances A. Welby. Edited by Dr. M. Camis, Institute of Physiology, University of Pisa. With a Preface by J. N. Langley, F.R.S., Professor of Physiology in the University of Cambridge. In four volumes. Vol. I.: Circulation and Respiration. Price 18s. net.

MANN BROTHERS, Darn Crook, Newcastle-upon-Tyne.

Hygiene and Comfort in Infants' Clothing. By Elia Renaud, Member of the Royal Sanitary Institute, Superintendent of Midwives, City and County of Newcastle-upon-Tyne. Price 1s. net; postage 1d.

MORRISON AND GIBB, LIMITED, Edinburgh.

National Association for the Prevention of Consumption and Other Forms of Tuberculosis. Transactions of Edinburgh Meeting and Conference on Tuberculosis, July, 1910. Price 2s. 6d. net.

PUTNAM'S (G. P.) SONS, New York and London.

The Jukes: A Study in Crime, Pauperism, Disease, and Heredity. By Robert L. Dugdale. Fourth edition. With a Foreword by Elisha Harris, M.D., Corresponding Secretary, Prison Association, and an Introduction by Franklin H. Giddings, Professor of Sociology in Columbia University. Price 5s. net.

The History of Medicine, Philosophical and Critical, from its Origin to the Twentieth Century. By David Allyn Gorton, M.D. In two volumes. Price 25s. net.

REBMAN, LIMITED, London.

The Experimental Chemotherapy of Spirilloses (Syphilis, Relapsing Fever, Spirillosis of Fowls, Frambœsia). By Paul Ehrlich and S. Hata. With Contributions by H. J. Nichols, New York; J. Iversen, St. Petersburg; Bitter, Cairo; and Dreyer, Cairo. Translated by A. Newbold, and Revised by Robert W. Felkin, M.D., F.R.S.E., &c., late Lecturer on Tropical Diseases, Edinburgh Medical School. Price 12s. net.

The Treatment of Syphilis with Salvarsan. By Sanitätsrat Dr. Wilhelm Wechselmann, of Berlin. With an Introduction by Professor Dr. Paul Ehrlich. Only Authorised Translation by Abr. L. Wolbarst, M.D., of New York. Price 21s. net.

ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH, Sixty-Sixth Street and Avenue A, New York, U.S.A.

Studies from the Rockefeller Institute for Medical Research. Reprints. Volume XI., 1910. Price not stated.

ROYAL GEOGRAPHICAL SOCIETY, 1, Savile-row, London, W.

Hints on Outfit for Travellers in Tropical Countries. By Charles Forbes Harford, M.A., M.D., Principal of Livingstone College. Second edition. Price not stated.

SANITARY PUBLISHING CO., London.

Economy in Sewage Disposal: Together with a History and Description of the Sutton (Surrey) Sewage Works. A Practical Guide for Councillors, Surveyors, and Works Managers. By C. Chambers Smith, M.Inst.M. and C.E., F.R.San.I. Price 1s. net.

SMITH, ELDER, AND CO., London.

Songs of the Road. By A. Conan Doyle. Price 5s.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ADAMS, E. G. B., M.B. Lond., F.R.C.S. Eng., has been appointed Clinical Assistant to the Samaritan Free Hospital for Women.

BAILEY, G. F. S., M.B., B.C. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Wooburn District of the county of Bucks.

BREWSTER, R. C., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at the Royal Hospital for Diseases of the Chest.

DAMAN, THOMAS W. A., M.B., C.M. Edin., has been appointed Medical Referee under the Workmen's Compensation Act for County Court Circuit No. 17 (Lincoln, Gainsborough, Horncastle, Market Rasen, and Caistor County Courts).

FAYRER, Lieut.-Col. Sir JOSEPH, R.A.M.C., has been appointed Superintendent of the Edinburgh Royal Infirmary.

GILES, J. A., M.B., B.S. Durh., has been appointed Medical Officer of Health of the Borough of Wallsend.

KILGOUR, WILLIAM ROBERT, M.R.C.S., L.R.C.P. Lond., has been appointed Resident Medical Officer at the Kensington Dispensary and Children's Hospital.

LOUGHRIDGE, J. A., M.B., B.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Ambl District of the county of Northumberland.

MUIR, GARVIN D., M.B., Ch.B. Glasg., F.R.C.S. Edin., has been appointed House Surgeon at the Hartlepools Hospital.

NOCK, W. W., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Penkridge District of the county of Stafford.

SCOTT, J. W., M.B., B.S. Dub., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Coalisland District of the county of Tyrone.

SHAW, ERNEST H., M.R.C.P. Lond., has been appointed Director of Clinical Pathology at the Great Northern Central Hospital, Holloway-road, N.

STALKER, WILLIAM STEWART, M.B., Ch.B. Glasg., D.P.H. Oxf., has been appointed Deputy Medical Officer of Health and Assistant School Medical Officer for the Borough of East Ham.

STRATON, A. A., M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Surgical Officer at the Wolverhampton and Staffordshire General Hospital, Wolverhampton.

TRIMBLE, C. J., C.M.G., L.R.C.P. Edin., D.P.H., has been appointed Medical Officer of Health of Walton-le-Dale.

TURNBULL, GEORGE LINDSAY, M.D., B.Ch. Oxon., has been appointed Honorary Medical Officer to the Kensington Dispensary and Children's Hospital.

WHITE, J., L.R.C.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Ballyragget District of the county of Kilkenny.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £80 per annum with board and residence.

BARNSLEY, BECKETT HOSPITAL.—Second House Surgeon, unmarried. Salary £80 per annum and all found.

BETHNAL GREEN INFIRMARY AND WORKHOUSE, Cambridge Heath, E.—Assistant Medical Officer. Salary at rate of £100 per annum, with apartments, board, and washing.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House Surgeon. Salary £80 per annum.

BIRMINGHAM PARISH INFIRMARY.—Resident Medical Officer. Salary £104 per annum, with apartments, rations, &c.

BRISTOL GENERAL HOSPITAL.—Casualty House Surgeon for six months. Salary £60, with board, residence, &c.

BURY INFIRMARY.—Senior House Surgeon. Salary £110 per annum with board, residence, and washing.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

CARDIFF INFIRMARY (GENERAL HOSPITAL).—House Surgeon for six months. Salary £30, with board, laundry, and residence.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road.—Resident House Surgeon. Salary £50 per annum, with board and residence.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £70 per annum, with board, apartments, and laundry.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £ per annum, with board, washing, and residence.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant Resident Medical Officer for six months, unmarried. Salary at rate of £50' annum, with board, apartments, and laundry

DORCHESTER, DORSET COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

DOUGLAS, NOBLE'S ISLE OF MAN HOSPITAL AND DISPENSARY.—Resident House Surgeon, unmarried. Salary £90 per annum, with board and washing.

DREADNOUGHT HOSPITAL, Greenwich, S.E.—Locum Tenens Medical Superintendent for six months.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing.

HASTINGS, EAST SUSSEX HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £50 per annum, with rooms, board, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physician for six months. Salary 30 guineas

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—Assistant Casualty Medical Officer and House Physician for six months, unmarried. Salary £30, with board, residence, &c.

HUDDERSFIELD INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board, residence, and washing.

HULL CORPORATION SANATORIUM AND EVAN FRASER (SMALL-POX) HOSPITAL.—Resident Medical Officer, unmarried. Salary £250 per annum, with board and washing.

HUNTINGDONSHIRE COUNTY COUNCIL.—County Medical Officer of Health and County School Medical Officer. Salary £400 per annum.

LEEDS GENERAL INFIRMARY.—Ophthalmic Officer. Salary £100 per annum, with board, residence, and washing. Also Medical Officer for Ida and Robert Arthington Hospitals, for six months. Salary £30. Also Obstetric Officer, Two House Physicians, House Surgeon, and Ophthalmic House Surgeon.

LINCOLN GENERAL DISPENSARY.—Resident Junior Medical Officer, unmarried. Salary £175 per annum, with apartments, &c.

LONDON FEVER HOSPITAL, Liverpool-road, N.—Assistant Resident Medical Officer. Salary £150 per annum, with residence and board.

MANCHESTER, HULME DISPENSARY.—Honorary Physician and Honorary Surgeon.

NEWCASTLE-UPON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary £160 per annum.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with board, lodging, and washing.

NOTTINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical Officer, unmarried. Salary £130 per annum, with apartments, board, washing, and attendance.

OLDHAM ROYAL INFIRMARY.—Senior House Surgeon and Third House Surgeon for six months. Salary £120 and £80 per annum respectively, with residence, board, and laundry.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

ROYAL DENTAL HOSPITAL OF LONDON, Leicester-square.—Morning House Anæsthetist. Salary £25 per annum.

ROYAL EAR HOSPITAL, Soho.—House Surgeon. Salary £40 per annum.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Third House Surgeon. Salary at rate of £50 per annum, with board and residence.

ROYAL NAVAL MEDICAL SERVICE.—Twelve Commissions.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.—Junior Resident Medical Officer. Salary at rate of £50 per annum, with board and washing.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand, W.C.—House Surgeon. Salary at rate of £50 per annum, with board, residence, and laundry.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Resident House Surgeon. Salary £80 per annum, with board and residence.

SHEFFIELD FEVER HOSPITALS.—Junior Assistant Medical Officer. Salary £130 per annum, with board, lodging, and washing.

SOUTHAMPTON FREE EYE HOSPITAL.—Honorary Surgeon.

STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.

SUNDERLAND ROYAL INFIRMARY.—Junior House Surgeon for six months. Salary £80 per annum, with board, residence, and washing.

THROAT HOSPITAL, Golden-square, W.—Honorary Assistant Registrar.

TIVERTON INFIRMARY AND DISPENSARY.—House Surgeon and Dispenser. Salary £80 per annum.

WAKEFIELD, WEST RIDING ASYLUM.—Assistant Medical Officer (Locum Tenens). Salary £3 3s. per week, with apartments and board.

WARRINGTON, LANCASHIRE COUNTY ASYLUM, Winwick.—Locum Tenens Medical Officer, unmarried, for four or five months. Salary 4 guineas per week, with apartments, board, and attendance.

WEST HAM UNION.—Second Assistant Resident Medical Officer. Salary £120 per annum.

WESTMINSTER HOSPITAL (opposite Westminster Abbey).—Medical Registrar. Salary £50 per annum.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Millport, in the county of Bute; at Kilmeaden, in the county of Waterford; at Ottery St. Mary, in the county of Devon; and at Forgue, in the county of Aberdeen.

THE Secretary of State for the Home Department gives notice of vacancies for Medical Referees under the Workmen's Compensation Act, 1906, for the Sheriffdom of Berwick, Roxburgh, and Selkirk; and for County Court Circuit No. 5.

Births, Marriages, and Deaths.

BIRTHS.

MACDONALD.—On March 12th, at Zanzibar, East Africa, the wife of George Allardice Macdonald, M.B., C.M. Edinburgh, Principal Medical Officer, of a daughter.

MARRIAGES.

RUSHER—SHERWOOD.—On April 18th, at White-Ladies-Aston Church, John Golby Rusher, M.R.C.S., of Pershore, Worcestershire, to Annie Emily, younger daughter of the Rev. H. M. Sherwood, of Pershore, late Vicar of White-Ladies-Aston.

DEATHS.

LAMB.—At 31, Comely Bank, Edinburgh, on April 11th, Major George Lamb, M.D., Indian Medical Service, Director of the Pasteur Institute, Kasauli, in his 42nd year.

SIMPSON.—On April 13th, at Bryn Estyn, Deganwy, N. Wales, Henry Simpson, M.D., late of Bowdon and Manchester, aged 82 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"FIRST AID" AS A THIEF CATCHER.

THERE are other frauds besides malingerers, and to some of them also the prevalence of "First-aid" studies seems likely to be a danger. The *Journal of the American Medical Association* in a recent issue tells the story of a man who, after purchasing some goods in a shop, offered in payment a cheque signed by a medical man. On inquiry he asserted that he was himself the medical man in question. The shop assistant, however, had become suspicious, and bethinking himself of his First-aid course asked the *soi-disant* doctor how many bones there were in the human body, whereupon the latter became confused and was arrested, and subsequently proved to be an impostor. The story is apt, but the moral halts somewhat. It would hardly be safe to arrest every medical man as an impostor who could not "prove himself" by stating offhand how many bones there are in the body.

A REMEDY FOR CANCER IN 1484.

To the Editor of THE LANCET.

SIR,—Among the MSS. of the town of Southampton printed by the Historical MSS. Commission (11th Report, Part III., p. 17), is the following:—"2 Richard III. A medicyne for a canker. Take the juice of the rote of a bethwynde otherwyse called wethwynde and anoynt the canker therwith ix. or x. days till he be hole (*sic*)."

I am, Sir, yours faithfully,

West Cromwell-road, S.W., April 8th, 1911. CHARLES DALTON.

TRAVELLING IN TROPICAL COUNTRIES.

WE have received the second edition of Dr. C. F. Harford's little book "Hints on Outfit," which will be found useful to all persons who intend to travel in tropical countries. Dr. Harford, who is instructor in health and outfit to the Royal Geographical Society, and is the principal of Livingstone College, has had many opportunities of knowing exactly what are the needs of the traveller with regard to clothing, food, medicine, and so forth, and the hints which he gives are thoroughly practical. The publishers are the Royal Geographical Society, 1, Savile-row, W.

LONGEVITY AT BRIGHTON.

ANOTHER case of remarkable longevity at Brighton is brought to notice by the celebration on Wednesday, April 5th, of the hundredth anniversary of the birth of Mr. Augustus Gordon Hake. Born at Exeter on April 5th, 1811, he was called to the bar in 1835, and is the oldest living barrister, and it is singular that the oldest member of the other branch of the legal profession lives in the sister town of Hove—namely, Mr. Janson, a solicitor. "For over 20 years," writes our local correspondent, "Brighton has not been without a centenarian inhabitant; it produces them at the rate of about three in two years. Brighton is also the home of the oldest acting alderman, who, in spite of his 95 years, still takes a personal part in the town affairs, while of his colleagues on the aldermanic bench no fewer than four others are octogenarians and three are septuagenarians. The oldest clown and actor, a nonagenarian, is also a resident of Brighton, and no doubt the Census returns have found many more very aged people who do not come into the public eye. Brighton's record for centenarianism is remarkable. The locality, no doubt, is a great factor in longevity, and that the town should have so many centenarians speaks volumes for the matchless air of Brighton. Mr. Hake has been a resident at Brighton for nearly 60 years, residing in the same house all the time."

A DISCLAIMER.

To the Editor of THE LANCET.

SIR,—I wish to state publicly through the medium of your columns that I am not the Dr. Burnet who recently lectured for the Bovril Company in Edinburgh. My name should not have been connected with this gathering and the similar one held in Glasgow. I am not connected in any way with the Bovril Company.

I am, Sir, yours faithfully,

Edinburgh, April 14th, 1911. JAMES BURNET.

THE PREVENTION OF PHTHISIS AMONG THE JEWISH POOR.

THE report of the Sanitary Committee of the Board of Guardians for the Relief of the Jewish Poor in East London shows a useful record of work for the year 1910. At the end of 1909 there were 760 cases of phthisis on the register, as against 624 at the end of 1908. During 1910, 336 new cases were added, making a total of 1096 cases dealt with during the year. At the end of the year 844 of these cases (486 men, 299 women, 59 children) remained on the register, 252 having been removed from it for the following reasons: 90 died, 68 were crossed off as apparently not suffering from consumption, 27 had emigrated, 13 had been repatriated, 20 had moved to the provinces and 2 to places within the City of Westminster, 29 were crossed off because nothing had been heard of them for over two years, and 3 were struck off the board's books as undesirables. The work done by the health visitors may be particularly commended.

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A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for April and May, 1911:—

April–October.—Rome Exhibition (United Italy's Jubilee).
,, 18th–28th (Tunis).—Exhibition of Hygiene.
,, 22nd–May 6th (London, Olympia).—Building Exhibition.
,, 23rd (Berlin).—Seventh Congress of the German Röntgen Society.
,, 24th–May 4th (London).—Clothing Exhibition.
,, 29th–Oct. 26th (Turin).—International Exhibition.
May 3rd–Oct. 31st (Glasgow).—Scottish Exhibition.
,, 18th–June 3rd (London).—Royal Naval and Military Tournament.
,, 22nd (opens) (London).—Imperial Conference.
,, 30th (The Hague).—International Congress on Opium.
,, 30th–June 2nd (London).—National Conference on the Prevention of Destitution.
,, (London).—Home Arts and Industries Exhibition.
,, (Paris).—International Sanitary Conference (Prevention of Plague).
,, (Washington).—Conference on the Protection of Industrial Property. (Question of False Marking of Goods.)
May–October (Dresden).—International Hygiene Exhibition.
May–October (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
May–October (London, Shepherd's Bush).—Coronation Exhibition.
,, ,, (London).—Earl's Court Exhibition.
,, (Los Angeles, Cal.).—American Medical Association.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

MONDAY.

ODONTOLOGICAL SECTION (Hon. Secretaries—H. B. Dowsett, W. W. James): at 8 P.M.

Paper:
Dr. W. Knowsley Sibley: The Relation between the Teeth and Certain Diseases of the Skin and Mucous Membrane.

Casual Communications:
Mr. Peyton Baly: (1) An Erosion Cavity on the Lingual Aspect of a Lower Incisor; (2) Dislocation of the Pulp of a Temporary Incisor, the Result of a Fall, with Subsequent Removal of the Pulp and Apex Intact.

TUESDAY.

MEDICAL SECTION (Hon. Secretaries—A. F. Voelcker, Sir John F. H. Broadbent, Bt.): at 5.30 P.M.

Discussion
On the After-History of Cases of Albuminuria occurring in Adolescence (opened by Dr. J. F. Goodhart).

Among those who have promised to take part in the Discussion are Dr. West, Dr. Tirard, Dr. Saundby, Dr. Clement Dukes, Dr. Herringham, Dr. Collier, Dr. Hale White, Dr. Armstrong, Dr. Garrod.

Fellows wishing to take part in the Discussion are requested to send their names to Dr. A. F. Voelcker, 101, Harley-street, W.

FRIDAY.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—J. P. Lockhart Mummery, T. R. Whipham, G. S. Haynes) at 11, Chandos-street, W.: at 4.30 P.M.

Dr. F. Parkes Weber: (1) Congenital Heart Disease without Murmur, and with a Family History of Congenital Cyanosis; (2) Congenital Heart Disease with Congenital Malformation of the Middle Ear.
Dr. J. L. Bunch: Congenital Syphilis Treated by "606."
Dr. A. W. G. Woodforde and Dr. E. Bellingham Smith: A Preliminary Communication on Syphilis and Mental Deficiency.

EPIDEMIOLOGICAL SECTION (Hon. Secretaries—W. H. Hamer, G. S. Buchanan): at 8.30 P.M.

Paper:
Dr. W. Bulloch and Mr. Major Greenwood, jun.: The Problem of Pulmonary Tuberculosis Considered from the Standpoint of Disposition.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Dr. C. W. Chapman: Notes on a Case of Pigmentary Syphilide in a Patient with Heart Disease.—Mr. E. W. Roughton: A Short Account of Fourteen Consecutive Successful Laparotomies for Acute Intussusception in Infants.—Dr. F. W. Langmead: Colonic Tetany.

MEDICO-LEGAL SOCIETY, 11, Chandos-street, Cavendish-square, W.

TUESDAY.—8.30 P.M., Dr. F. J. Waldo: The Ancient Office of Coroner.

ILLUMINATING ENGINEERING SOCIETY, House of the Royal Society of Arts, John-street, Adelphi, W.C.

MONDAY.—8 P.M., Mr. H. T. Harrison: The Ratio of Light to Illumination.—Mr. P. J. Waldram: Some Notes on the Effect of Wall-papers upon the Illumination of Interiors.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY.—5 P.M., Mr. Shattock: Specimens Illustrating Actinomycosis, Leprosy, &c. (Museum Demonstration.)
FRIDAY.—5 P.M., Prof. Keith: Specimens Illustrating Meningocele and Other Congenital Deformities of the Brain and Membranes. (Museum Demonstration.)

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).
TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).
WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).
FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.
THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4.30 P.M., Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

TUESDAY.—5.15 P.M., Demonstration:—Mr. H. A. T. Fairbank: Deformities—Scoliosis; Neurotic Spine. (Special Post-Graduate Course.)
FRIDAY.—5.15 P.M., Demonstration:—Mr. H. A. T. Fairbank: Deformities—Flat-foot; Genu Valgum; Genu Varum. (Special Post-Graduate Course.)

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Lecture;—Mr. C. Nourse: Accessory Sinuses.
FRIDAY.—3.30 P.M., Special Clinical Demonstration:—Dr. Abercrombie: Interesting Cases.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—5 P.M., Dr. M. Dockrell: The Hair in Health and Disease. (Post-Graduate Lecture.)

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

FRIDAY.—9 P.M., Prof. W. M. Flinders Petrie: The Revolutions of Civilization.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Mr. Douglas: Some Aspects of Diseases of the Breast. (Post-Graduate Clinic.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (26th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (27th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor. 9 A.M., Major, 2 P.M.).

SATURDAY (29th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 19th, 1911.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
April 13	30·44	N.E.	...	96	54	40	41	44	Cloudy
,, 14	30·38	N.W.	...	94	63	40	43	45	Fine
,, 15	30·23	S.W.	...	105	67	41	42	44	Fine
,, 16	29·97	WSW	...	108	57	42	43	45	Cloudy
,, 17	29·88	S.W.	...	100	61	42	44	47	Cloudy
,, 18	29·72	S.W.	...	105	64	42	49	51	Cloudy
,, 19	29·52	S.W.	...	113	58	49	48	52	Cloudy

The following journals, magazines, &c., have been received:—Revue de Gynécologie, Maryland Medical Journal, American Journal of Clinical Medicine, Archivos Brasileiros de Medicina, Canadian Journal of Medicine and Surgery, St. Paul Medical Journal, Archives de Médecine et de Pharmacie Militaires, Monthly Cyclopædia, Bulletin of the Sleeping Sickness Bureau, Tuberculosis, Bulletin of the Ayer Clinical Laboratory of the Pennsylvania Hospital, National Health, London Hospital Gazette, Dublin Medical Journal, Prescriber, Journal of the East Africa and Uganda Natural History Society, Peru To-day, Clinique Ophtalmologique, Revue de Chirurgie, Revue de Médecine, Archiv für Experimentelle Pathologie, Guy's Hospital Gazette, Symons's Meteorological Magazine, Klinik für Psychische und Nervöse Krankheiten, Interstate Medical Journal, American Medicine, Albany Medical Annals, Pacific Medical Journal, St. Bartholomew's Hospital Journal, Journal of the Royal Institute of Public Health, Medical Review of Reviews, Birmingham Medical Review, Bulletin of the Johns Hopkins Hospital, Old-Lore Miscellany, British Journal of Dental Science, American Journal of Surgery, British Journal of Dermatology, West London Medical Journal.

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